ENGIN. LIBRARY
TA
1
E45

GENERAL INDEX.

Illustrated Subjects are Marked with an Asterisk after the Number of the Page.

A.

A.I. ELECTRIC WELDING MACHINES, LTD., Welding Machine for Motor-Vehicle Wheel Rims, 257*; Electric Pipe-Heating Machine, 257*; Butt-Welding Machines at Shepcote Lane Works, Sheffield, 333*, 363*
Abelson & Co. (Engineers), Ltd., Self-Erecting Building Crane, 648*
Aber Gorge, North Wales, Use of Rockets for Conductor Stringing Across, 114
Aberdeen Harbour Commission, Aluminium-Alloy Bascule Bridge, 481*
Abernant Colliery Project, South Wales, 243
Abetti, P. A., on Transformer Models Determining Transient Voltage, 118
Abinger Observatory, Astronomer Royal's Report, 126
Absorbers for Solar Energy Schemes, 372, 377*, 409*
A.C. "Ace" Motor Car, 566*

Accidents:

Accident with Grinding Wheel, Legal Decision on, 691
— in Mines and Quarries, 1951, 659
Colliery Accidents, Chief Inspector's Report, 242
Contractors' Safety Organisation, 402
Railway Accident, Harrow-Wealdstone, Report on, 49, 53. See LETTER, 147
Shipping Accidents and Provision of Life-boats and Rafts, 458, 465. See LETTER, 532
Accles and Pollock, Ltd., Manufacture and Manipulation of Seamless Tubes, 161*, 193*, 225*
"Accountant" Commercial Aircraft, 218; "Accountant" Air-Liner, Prestressed Fuselage for, 311*
Accumulator. Air-Hydraulic, at Shepcote Lane Works, Sheffield, 363*
— Hot-Water, for District Heating, 422, 507*
— Vehicles. See *Motor Vehicle; Motor Truck*
Acetylene-Oxygen Blowpipe. See *Blowpipes*
— Welding. See *Welding*
Acme Flooring and Paving (1904), Ltd., Timber Flooring for Aluminium-Alloy Bascule Bridge, Aberdeen, 481*
Acoustic Wall at London Airport, 201*
Acton, Ice-Cream Factory of T. Wall & Sons, Ltd., 502*
Adams Lecture on Welding Research in British Merchant Shipbuilding, 639. See 586
Address, Presidential. See *Presidential Address*
Adhesives, Metal, for Aircraft Structures, 424
Admiralty. See *Warships*
A.E.C., Ltd., 60-kW Diesel-Driven Generator Set, 353*; 11·3-litre "Power Pack" Diesel Engine, 353*
Aerial Navigation. See *Aeronautics*
— Propellers. See *Propellers* under *Aeronautics*
— Transport. See *Air Transport* under *Aeronautics*
— Unit, Self-Aligning, Automatic Radar Meteorological Station, 300*
Aero Club, Royal, Wright Jubilee Dinner, 823. See 818
Aero Controls, Ltd., Staging Units of Standard Aluminium-Alloy Parts, 448*
Aerodynamics. See *Aeronautics*
Aeronautical Sciences, Institute of, Anglo-American Conference. See *Aeronautical Conference, Anglo-American* under *Aeronautics*
— Society, Royal, Awards by, 274; Wilbur Wright Lecture on Buckling and Stability, by Prof. N. J. Hoff, 371; (*Brough, Yorkshire Branch*) Industrial and Aeronautical Applications of Small Gas Turbine, by F. R. Bell, 668; Stability and Control in Aircraft Design, by J. C. Wimpenny, 682; Gusts and Their Measurement, by J. Taylor, 765; Development of 4,000-lb. per sq. in. Hydraulic Systems, by G. Orloff, 766*; Wright Jubilee Dinner, 823. See 818; Anglo-American Aeronautical Conference. See *Aeronautical Conference, Anglo-American*, under *Aeronautics*

Aeronautics:

"Accountant" Air-Liner, Prestressed Fuselage for, 311*
"Accountant" Commercial Aircraft, 218
Aerodynamic Measurements, N.L.L. Card Catalogue of, 376
Aerodynamics, Propeller and Helicopter, Elements of (Review), 387
Aerofoil Models, Manufacture and Inspection of, 218*
Aeronautical Conference, Anglo-American: Report of Proceedings, 371, 423, 453; Structures for High-Speed Aircraft, by H. L. Hibbard and J. F. McBrearty 423; Some Observations on Fatigue of Aeroplane Structures, by R. V. Rhodie, 423; Structural Adhesives for Metal Aircraft, by Dr. N. A. de Bruyne, 424; Aircraft De-Icing by Thermal Methods, by J. L. Orr, D. Fraser and J. H. Milsum, 424; Control of Flight, by P. R. Bassett, 424; Some Recent Advances in Boundary Layer and Circulation Control, by C. D. Perkins and D. C. Hazen, 453; Pod Mounting of Jet Engines by G. S. Schairer, 453; Power Plants for Rotary Wing Aircraft, by A. G. Forsyth, 454*; Some Factors Affecting Helicopter Design and Future Operations, by R. H. Miller, 454
— Documentation Proposals by North Atlantic Treaty Organisation, 499
— Work of W. and O. Wright, 737*, 753. See *Errata*, 791
Aeroplane, "Hawker Hunter," Air Speed Record by, 338, 374*
— Structures, Fatigue in, 423
— Transport, Car-Ferry, "Breguet Deux Ponts," 169*
— Wright-Flyer, Development of, 737*, 753. See *Errata*, 791
— See also *Air Liner, Aircraft, Flying Boat* (below)
Air Car-Ferry Services of Silver City Airways, Ltd., 169*
— Liner "Accountant" Prestressed Fuselage for, 311*
— — "Britannia" (Bristol Aeroplane Co., Ltd.), 331
— — "Caravelle," 76*
— — "Comet," of British Overseas Airways Corporation, Service Results, 692
— — "Comet" Series 2 (de Havilland Aircraft, Ltd.), 330*
— — "Heron" Series 2 (de Havilland Aircraft Co., Ltd.), 331*
— — "Hurel-Dubois 31," 75*
— — Projects, 471
— Salon, Paris, International, 19, 42*, 50, 73*
— Transport, British Independent, Association, Annual Report, 746
— — Movements in United Kingdom, Statistics of, 307
Aircraft, 4,000-lb. per sq. in. Hydraulic System for, 766*
— Air-Turbine Accessory Drives for (Rotol, Ltd.), 777
— Anti-Submarine "Sea Mew" (Short Brothers and Harland, Ltd.), 375*
— "Avro" Delta-Wing (A. V. Roe & Co., Ltd.), 374*
— Bombing, "Valiant" Mark 2 (Vickers-Armstrongs, Ltd.), 374*
— — "Victor" (Handley Page, Ltd.), 374*
— of British Independent Air Transport Association, 746
— Cabins, Cold-Air Unit for (de Havilland Propellers, Ltd.), 255*
— Carrier "Antietam" with angled Flight Deck, 52*
— Civil, Cost per lb. of, 635. See LETTERS, 756, 787
— Commercial Transport "Accountant" (Aviation Traders (Engineering), Ltd.), 218
— Control Systems, Mechanism for Varying Mechanical Ratios of, 701
— Design, Stability and Control in, 682
— Double-End Spring Washers for, Specification, 143
— Effect of Gusts on, 765
— Engineering, Automatic Computing in, 344, 351
— Exhibition and Flying Display, Farnborough Aerodrome, 307, 330*, 374*, 404*
— Fighting, Dassault "Mystère," 74*
— Ground-Support "S.E. 5000 Baroudeur," 74*
— — Support, "Potez 75," 74*
— High-Speed, Structures for, 423
— Industry, Use of Titanium and Titanium Alloys in, 635. See LETTERS, 756, 787
— Light Transport "Beaver" Series 2 (de Havilland Aircraft of Canada, Ltd.), 406*
— Lightweight Ejector Seat for (Martin Baker Aircraft Co., Ltd.), 585
— Machined Box-Spar for (Short Brothers and Harland, Ltd.), 404*
— Metal, Structural Adhesives for, 424
— "Meteor NF11" Tailplane, Component Parts of (Sir W. G. Armstrong, Whitworth Aircraft, Ltd.), 404*
— Military Transport, "Beverley" (Blackburn and General Aircraft, Ltd.), 405*
— — Twin Jet, "Vautour," 74*
— Naval, Undercarriage for, 799*
— Power Plants for (Review), 99
— Prestressed Fuselage Construction for (Aviation Traders (Engineering), Ltd.), 311*
— Propulsion, Theory and Performance (Review), 134
— Redux-Bonded Wing-Skin for (Short Brothers and Harland, Ltd.), 405
— Research, "P.111A" Delta-Wing (Boulton & Paul Aircraft, Ltd.), 375*
— — "Sherpa," with Aero-Isoclinic Wing (Short Brothers and Harland, Ltd.), 544*, 749*
— — "S.B.5," Adjustable-Wing, 375*
— Stability and Buckling, 371
— — and Control in Design, 682
— Steel and Aluminium, Nuts and Bolts for, Specification, 15
— — Wire Rope for, Swaged Cable-End Assemblies for, Specification, 143
— Strike-Fighter, Naval "Vultur," 74*
— Supersonic, Experimental, "Trident," 74*
— Training, Jet, S.I.P.A. 200 "Minijet," 44*
— — Twin-Jet, Fouga "Magister," 42*
— — Twin-Jet, Morane-Saulnier "Fleuret," 43*
— Wing, Moulded-Plastic (Bristol Aeroplane Co., Ltd.), 405
Airport, Gatwick, Government Scheme for, 139
— London, Acoustic Wall at, 201*; Developments of, 397*
Airstream Direction Detector (Ferranti, Ltd.), 480*
"Alouette" Helicopter, 75*
"Avon" R.A.14 Jet Engine (Rolls-Royce Ltd.), 406*
"Avro" Delta-Wing Aircraft (A. V. Roe & Co., Ltd.), 374*
Balloons for Transponders, Automatic Radar-Meteorological Station, 299*
"Baroudeur" Ground-Support Aircraft, 74*
"Beaver" Series 2 Light Transport Aircraft (de Havilland Aircraft of Canada, Ltd.), 406*
"Beverley" Military Transport Aircraft (Blackburn and General Aircraft, Ltd.), 405*
Boundary Layer Control Research, 453
"Breguet Deux Ponts" Aeroplane, 169*
"Britannia" Air Liner (Bristol Aeroplane Co., Ltd.), 331
British European Airways, Annual Report, 467
— Overseas Airways Corporation, Annual Report, 435
Buckling and Stability in Aircraft, 371
"Canberra" Flying Test-Bed (Rolls-Royce Ltd.), 406*
"Caravelle" Air Liner, 76*
Circulation Control Research, 453
Civil Aviation, Ministry of, Proposed Amalgamation with Ministry of Transport, 19
— — and Transport, Ministry of, Statement on London Airports, 139; Acoustic Wall at London Airport, 201*; Statistics of Air Transport Movements, 307
"Comet" Air Liners, of British Overseas Airways Corporation, Service Results, 692
"Comet" Series 2 Air Liner (de Havilland Aircraft, Ltd.), 330*
Control Systems, Aircraft, Mechanism for Varying Mechanical Ratios of (Boulton Paul Aircraft, Ltd.), 701*
De-Icing Aircraft by Thermal Methods, 424
"Djinn" Helicopter, 75*
"Ecrevisse" Pulse Jet, 73*
Ejector Seat, Lightweight, for Aircraft (Martin Baker Aircraft Co., Ltd.), 585
Engine, Aeroplane, East Kilbride Factory for, 717*
— — Fire Detectors for (Graviner Manufacturing Co., Ltd.), 576*
— — Gas-Turbine, Liquid-Fuel Turbo-Starter for (Plessey Co., Ltd.), 733*
— — Gas Turbine, Use of Titanium in, 635. See LETTER, 756, 787
— — Jet, "Avon" R.A.14 (Rolls-Royce Ltd.), 406*
— — Jet, "Gyron" (de Havilland Engine Co., Ltd.), 179
— — Jet, Pod Mounting of, 453
— — Jet, Turbine Blades for (Firth-Derihon Stampings, Ltd.), 91*
— — Jet, Turbine Wheels for (W. Jessop & Sons, Ltd.), 91*
— — Jet, "Viper ASV3" (Armstrong Siddeley Motors, Ltd.), 329*
— — Welded Tubular Mounting for, 193*
— — See also *Turbines, Gas*
— Pulse-Jet, for Helicopters (Sanders-Roe, Ltd.), 319*
"Ecrevisse" Pulse Jet, 73*
"Escopette" Pulse Jet, 73*
"Farfadet" Convertible Helicopter, 75*
"Fleuret" Twin-Jet Training Aircraft, 43*
Flight Deck, Angled, for Aircraft Carriers, 52*
— Instruments, Developments of, 424
Flying Boat "Princess" at High Altitudes (Saunders-Roe, Ltd.), 331*; Future of, 653
— Display and Static Exhibition, Farnborough Aerodrome, 307, 330*, 374*, 404*
Fuselage Construction, Prestressed (Aviation Traders (Engineering), Ltd.), 311*
Gliding Tests by W. and O. Wright, 737*. See *Errata*, 791
Gusts and Their Measurement, 765
"Gyron" Jet Aero Engine, 179
"Hawker Hunter," Aeroplane, Air Speed Record by, 338, 374*
Helicopter, "Alouette," 75*
— Association of Great Britain, Ground Resonance of Helicopters, by R. M. Howarth and C. H. Jones, 779
— Convertible, "Farfadet," 75*
— Design, Factors Affecting, 454
— "Djinn," 75*
— Ground Resonance of, 779
— Power Plants for, 454*
— and Propeller Aerodynamics (Review), 387
— Pulse-Jet Engines for (Saunders-Roe, Ltd.), 319*
"Heron" Series 2 Air Liner (de Havilland Aircraft Co., Ltd.), 331*
"Hurel-Dubois 31" Air Liner, 75*
Hydraulic Systems for Aircraft, 766*
Icing of Aircraft, Thermal Methods for Combating, 424
Instruments for Controlling Flight, 424
"Magister" Twin-Jet Training Aircraft, 42*
"Meteor N.F.11" Tailplane Aircraft, Component Parts of (Sir W. G., Armstrong, Whitworth & Co., Ltd.), 404*
"Minijet" Light Training Aircraft, 44*
"Mystère" Fighting Aircraft, 74*
National Luchvaart-laboratorium, Card Catalogue of Aerodynamic Measurements, 376
"Olympus Canberra" Flying Test-Bed (Bristol Aeroplane Co., Ltd.), 406
"P.111A" Delta-Wing Research Aircraft (Boulton Paul Aircraft, Ltd.), 375*
Pilot, Automatic, Developments of, 424
"Potez 75" Ground-Support Aircraft, 74*
"Princess" Flying Boat at High Altitudes, 331*; Future of, 653
Propeller, Aerial, Forging of Titanium Alloy for Blades of, 373*
— and Helicopter Aerodynamics (Review), 387
Propulsion, Aircraft Theory and Performance (Review), 134
Pulse Jets, "Escopette" and "Ecrevisse," 73*
Rockets, Guided, British, Progress with, 274
— Motor "Super Sprite" (de Havilland Engine Co., Ltd.), 287
Royal Air Force Technical College, Henlow, Courses at, 435
— Aircraft Establishment, Investigation on Wear of Carbon Brushes at High Altitudes, 726
"S.B.5" Adjustable-Wing Research Aircraft (Short Brothers and Harland, Ltd.), 375*
"Sea Mew" Anti-Submarine Aircraft (Short Brothers and Harland, Ltd.), 375*
"Sherpa" Research Aircraft with Aero-Isoclinic Wing (Short Brothers and Harland, Ltd.), 544*, 749*
Stability, Aeroplane. See *Aircraft* (above)
Structures for High-Speed Aircraft, 423
"Super Sprite" Rocket Motor (de Havilland Engine Co., Ltd.), 406*
Target, Towed, High-Speed (Air Service Training, Ltd.), 405*
Test-Bed, Flying, "Canberra" (Rolls-Royce Ltd.), 406*
— — Flying, "Olympus-Canberra" (Bristol Aeroplane Co., Ltd.), 406
— House, Aircraft, and Research Laboratories (Handley Page, Ltd.), 150*
Thrust-Spoiler, Jet, Demonstration of, 73
Transport, Air. See *Air Transport* (above)
"Trident" Experimental Supersonic Aircraft, 74*
Undercarriage for Naval Aircraft (British Messier, Ltd.), 799*
"Valiant" Mark 2 Bomber Aircraft (Vickers-Armstrongs Ltd.), 374*
"Vautour" Twin-Jet Military Aircraft, 74*
"Victor" Bomber Aircraft (Handley Page, Ltd.), 374*
"Viper 3" Jet Aero Engine (Armstrong Siddeley Motors, Ltd.), 329*

ENGIN. LIBRARY
TA
1
E45

GENERAL INDEX.

Illustrated Subjects are Marked with an Asterisk after the Number of the Page.

A.

A.I. ELECTRIC WELDING MACHINES, LTD., Welding Machine for Motor-Vehicle Wheel Rims, 257*; Electric Pipe-Heating Machine, 257*; Butt-Welding Machines at Shepcote Lane Works, Sheffield, 333*, 363*
Abelson & Co. (Engineers), Ltd., Self-Erecting Building Crane, 648*
Aber Gorge, North Wales, Use of Rockets for Conductor Stringing Across, 114
Aberdeen Harbour Commission, Aluminium-Alloy Bascule Bridge, 481*
Abernant Colliery Project, South Wales, 243
Abetti, P. A., on Transformer Models Determining Transient Voltage, 118
Abinger Observatory, Astronomer Royal's Report, 126
Absorbers for Solar Energy Schemes, 372, 377*, 409*
A.C. "Ace" Motor Car, 566*

Accidents:

Accident with Grinding Wheel, Legal Decision on, 691
— in Mines and Quarries, 1951, 659
Colliery Accidents, Chief Inspector's Report, 242
Contractors' Safety Organisation, 402
Railway Accident, Harrow-Wealdstone, Report on, 49, 53. See LETTER, 147
Shipping Accidents and Provision of Life-boats and Rafts, 458, 465. See LETTER, 532
Accles and Pollock, Ltd., Manufacture and Manipulation of Seamless Tubes, 161*, 193*, 225*
"Accountant" Commercial Aircraft, 218; "Accountant" Air-Liner, Prestressed Fuselage for, 311*
Accumulator. Air-Hydraulic, at Shepcote Lane Works, Sheffield, 363*
— Hot-Water, for District Heating, 422, 507*
— Vehicles. See *Motor Vehicle; Motor Truck*
Acetylene-Oxygen Blowpipe. See *Blowpipes*
— Welding. See *Welding*
Acme Flooring and Paving (1904), Ltd., Timber Flooring for Aluminium-Alloy Bascule Bridge, Aberdeen, 481*
Acoustic Wall at London Airport, 201*
Acton, Ice-Cream Factory of T. Wall & Sons, Ltd., 502*
Adams Lecture on Welding Research in British Merchant Shipbuilding, 639. See 586
Address, Presidential. See *Presidential Address*
Adhesives, Metal, for Aircraft Structures, 424
Admiralty. See *Warships*
A.E.C., Ltd., 60-kW Diesel-Driven Generator Set, 353*; 11·3-litre "Power Pack" Diesel Engine, 353*
Aerial Navigation. See *Aeronautics*
— Propellers. See *Propellers* under *Aeronautics*
— Transport. See *Air Transport* under *Aeronautics*
— Unit, Self-Aligning, Automatic Radar Meteorological Station, 300*
Aero Club, Royal, Wright Jubilee Dinner, 823. See 818
Aero Controls, Ltd., Staging Units of Standard Aluminium-Alloy Parts, 448*
Aerodynamics. See *Aeronautics*
Aeronautical Sciences, Institute of, Anglo-American Conference. See *Aeronautical Conference, Anglo-American* under *Aeronautics*
— Society, Royal, Awards by, 274; Wilbur Wright Lecture on Buckling and Stability, by Prof. N. J. Hoff, 371; (*Brough, Yorkshire Branch*) Industrial and Aeronautical Applications of Small Gas Turbine, by F. R. Bell, 668; Stability and Control in Aircraft Design, by J. C. Wimpenny, 682; Gusts and Their Measurement, by J. Taylor, 765; Development of 4,000-lb. per sq. in. Hydraulic Systems, by G. Orloff, 766*; Wright Jubilee Dinner, 823. See 818; Anglo-American Aeronautical Conference. See *Aeronautical Conference, Anglo-American*, under *Aeronautics*

Aeronautics:

"Accountant" Air-Liner, Prestressed Fuselage for, 311*
"Accountant" Commercial Aircraft, 218
Aerodynamic Measurements, N.L.L. Card Catalogue of, 376
Aerodynamics, Propeller and Helicopter, Elements of (Review), 387
Aerofoil Models, Manufacture and Inspection of, 218*
Aeronautical Conference, Anglo-American: Report of Proceedings, 371, 423, 453; Structures for High-Speed Aircraft, by H. L. Hibbard and J. F. McBrearty 423; Some Observations on Fatigue of Aeroplane Structures, by R. V. Rhodie, 423; Structural Adhesives for Metal Aircraft, by Dr. N. A. de Bruyne, 424; Aircraft De-Icing by Thermal Methods, by J. L. Orr, D. Fraser and J. H. Milsum, 424; Control of Flight, by P. R. Bassett, 424; Some Recent Advances in Boundary Layer and Circulation Control, by C. D. Perkins and D. C. Hazen, 453; Pod Mounting of Jet Engines by G. S. Schairer, 453; Power Plants for Rotary Wing Aircraft, by A. G. Forsyth, 454*; Some Factors Affecting Helicopter Design and Future Operations, by R. H. Miller, 454
— Documentation Proposals by North Atlantic Treaty Organisation, 499
— Work of W. and O. Wright, 737*, 753. See *Errata*, 791
Aeroplane, "Hawker Hunter," Air Speed Record by, 338, 374*
— Structures, Fatigue in, 423
— Transport, Car-Ferry, "Breguet Deux Ponts," 169*
— Wright-Flyer, Development of, 737*, 753. See *Errata*, 791
— See also *Air Liner, Aircraft, Flying Boat* (below)
Air Car-Ferry Services of Silver City Airways, Ltd., 169*
— Liner "Accountant" Prestressed Fuselage for, 311*
— — "Britannia" (Bristol Aeroplane Co., Ltd.), 331
— — "Caravelle," 76*
— — "Comet," of British Overseas Airways Corporation, Service Results, 692
— — "Comet" Series 2 (de Havilland Aircraft, Ltd.), 330*
— — "Heron" Series 2 (de Havilland Aircraft Co., Ltd.), 331*
— — "Hurel-Dubois 31," 75*
— — Projects, 471
— Salon, Paris, International, 19, 42*, 50, 73*
— Transport, British Independent, Association, Annual Report, 746
— — Movements in United Kingdom, Statistics of, 307
Aircraft, 4,000-lb. per sq. in. Hydraulic System for, 766*
— Air-Turbine Accessory Drives for (Rotol, Ltd.), 777
— Anti-Submarine "Sea Mew" (Short Brothers and Harland, Ltd.), 375*
— "Avro" Delta-Wing (A. V. Roe & Co., Ltd.), 374*
— Bombing, "Valiant" Mark 2 (Vickers-Armstrongs, Ltd.), 374*
— — "Victor" (Handley Page, Ltd.), 374*
— of British Independent Air Transport Association, 746
— Cabins, Cold-Air Unit for (de Havilland Propellers, Ltd.), 255*
— Carrier "Antietam" with angled Flight Deck, 52*
— Civil, Cost per lb. of, 635. See LETTERS, 756, 787
— Commercial Transport "Accountant" (Aviation Traders (Engineering), Ltd.), 218
— Control Systems, Mechanism for Varying Mechanical Ratios of, 701
— Design, Stability and Control in, 682
— Double-End Spring Washers for, Specification, 143
— Effect of Gusts on, 765
— Engineering, Automatic Computing in, 344, 351
— Exhibition and Flying Display, Farnborough Aerodrome, 307, 330*, 374*, 404*
— Fighting, Dassault "Mystère," 74*
— Ground-Support "S.E. 5000 Baroudeur," 74*
— — Support, "Potez 75," 74*
— High-Speed, Structures for, 423
— Industry, Use of Titanium and Titanium Alloys in, 635. See LETTERS, 756, 787
— Light Transport "Beaver" Series 2 (de Havilland Aircraft of Canada, Ltd.), 406*
— Lightweight Ejector Seat for (Martin Baker Aircraft Co., Ltd.), 585
— Machined Box-Spar for (Short Brothers and Harland, Ltd.), 404*
— Metal, Structural Adhesives for, 424
— "Meteor NF11" Tailplane, Component Parts of (Sir W. G. Armstrong, Whitworth Aircraft, Ltd.), 404*
— Military Transport, "Beverley" (Blackburn and General Aircraft, Ltd.), 405*
— — Twin Jet, "Vautour," 74*
— Naval, Undercarriage for, 799*
— Power Plants for (Review), 99
— Prestressed Fuselage Construction for (Aviation Traders (Engineering), Ltd.), 311*
— Propulsion, Theory and Performance (Review), 134
— Redux-Bonded Wing-Skin for (Short Brothers and Harland, Ltd.), 405
— Research, "P.111A" Delta-Wing (Boulton & Paul Aircraft, Ltd.), 375*
— — "Sherpa," with Aero-Isoclinic Wing (Short Brothers and Harland, Ltd.), 544*, 749*
— — "S.B.5," Adjustable-Wing, 375*
— Stability and Buckling, 371
— — and Control in Design, 682
— Steel and Aluminium, Nuts and Bolts for, Specification, 15
— — Wire Rope for, Swaged Cable-End Assemblies for, Specification, 143
— Strike-Fighter, Naval "Vultur," 74*
— Supersonic, Experimental, "Trident," 74*
— Training, Jet, S.I.P.A. 200 "Minijet," 44*
— — Twin-Jet, Fouga "Magister," 42*
— — Twin-Jet, Morane-Saulnier "Fleuret," 43*
— Wing, Moulded-Plastic (Bristol Aeroplane Co., Ltd.), 405
Airport, Gatwick, Government Scheme for, 139
— London, Acoustic Wall at, 201*; Developments of, 397*
Airstream Direction Detector (Ferranti, Ltd.), 480*
"Alouette" Helicopter, 75*
"Avon" R.A.14 Jet Engine (Rolls-Royce Ltd.), 406*
"Avro" Delta-Wing Aircraft (A. V. Roe & Co., Ltd.), 374*
Balloons for Transponders, Automatic Radar-Meteorological Station, 299*
"Baroudeur" Ground-Support Aircraft, 74*
"Beaver" Series 2 Light Transport Aircraft (de Havilland Aircraft of Canada, Ltd.), 406*
"Beverley" Military Transport Aircraft (Blackburn and General Aircraft, Ltd.), 405*
Boundary Layer Control Research, 453
"Breguet Deux Ponts" Aeroplane, 169*
"Britannia" Air Liner (Bristol Aeroplane Co., Ltd.), 331
British European Airways, Annual Report, 467
— Overseas Airways Corporation, Annual Report, 435
Buckling and Stability in Aircraft, 371
"Canberra" Flying Test-Bed (Rolls-Royce Ltd.), 406*
"Caravelle" Air Liner, 76*
Circulation Control Research, 453
Civil Aviation, Ministry of, Proposed Amalgamation with Ministry of Transport, 19
— — and Transport, Ministry of, Statement on London Airports, 139; Acoustic Wall at London Airport, 201*; Statistics of Air Transport Movements, 307
"Comet" Air Liners, of British Overseas Airways Corporation, Service Results, 692
"Comet" Series 2 Air Liner (de Havilland Aircraft, Ltd.), 330*
Control Systems, Aircraft, Mechanism for Varying Mechanical Ratios of (Boulton Paul Aircraft, Ltd.), 701*
De-Icing Aircraft by Thermal Methods, 424
"Djinn" Helicopter, 75*
"Ecrevisse" Pulse Jet, 73*
Ejector Seat, Lightweight, for Aircraft (Martin Baker Aircraft Co., Ltd.), 585
Engine, Aeroplane, East Kilbride Factory for, 717*
— — Fire Detectors for (Graviner Manufacturing Co., Ltd.), 576*
— — Gas-Turbine, Liquid-Fuel Turbo-Starter for (Plessey Co., Ltd.), 733*
— — Gas Turbine, Use of Titanium in, 635. See LETTER, 756, 787
— — Jet, "Avon" R.A.14 (Rolls-Royce Ltd.), 406*
— — Jet, "Gyron" (de Havilland Engine Co., Ltd.), 179
— — Jet, Pod Mounting of, 453
— — Jet, Turbine Blades for (Firth-Derihon Stampings, Ltd.), 91*
— — Jet, Turbine Wheels for (W. Jessop & Sons, Ltd.), 91*
— — Jet, "Viper ASV3" (Armstrong Siddeley Motors, Ltd.), 329*
— — Welded Tubular Mounting for, 193*
— — See also *Turbines, Gas*
— Pulse-Jet, for Helicopters (Sanders-Roe, Ltd.), 319*
"Ecrevisse" Pulse Jet, 73*
"Escopette" Pulse Jet, 73*
"Farfadet" Convertible Helicopter, 75*
"Fleuret" Twin-Jet Training Aircraft, 43*
Flight Deck, Angled, for Aircraft Carriers, 52*
— Instruments, Developments of, 424
Flying Boat "Princess" at High Altitudes (Saunders-Roe, Ltd.), 331*; Future of, 653
— Display and Static Exhibition, Farnborough Aerodrome, 307, 330*, 374*, 404*
Fuselage Construction, Prestressed (Aviation Traders (Engineering), Ltd.), 311*
Gliding Tests by W. and O. Wright, 737*. See *Errata*, 791
Gusts and Their Measurement, 765
"Gyron" Jet Aero Engine, 179
"Hawker Hunter," Aeroplane, Air Speed Record by, 338, 374*
Helicopter, "Alouette," 75*
— Association of Great Britain, Ground Resonance of Helicopters, by R. M. Howarth and C. H. Jones, 779
— Convertible, "Farfadet," 75*
— Design, Factors Affecting, 454
— "Djinn," 75*
— Ground Resonance of, 779
— Power Plants for, 454*
— and Propeller Aerodynamics (Review), 387
— Pulse-Jet Engines for (Saunders-Roe, Ltd.), 319*
"Heron" Series 2 Air Liner (de Havilland Aircraft Co., Ltd.), 331*
"Hurel-Dubois 31" Air Liner, 75*
Hydraulic Systems for Aircraft, 766*
Icing of Aircraft, Thermal Methods for Combating, 424
Instruments for Controlling Flight, 424
"Magister" Twin-Jet Training Aircraft, 42*
"Meteor N.F.11" Tailplane Aircraft, Component Parts of (Sir W. G., Armstrong, Whitworth & Co., Ltd.), 404*
"Minijet" Light Training Aircraft, 44*
"Mystère" Fighting Aircraft, 74*
National Luchvaart-laboratorium, Card Catalogue of Aerodynamic Measurements, 376
"Olympus Canberra" Flying Test-Bed (Bristol Aeroplane Co., Ltd.), 406
"P.111A" Delta-Wing Research Aircraft (Boulton Paul Aircraft, Ltd.), 375*
Pilot, Automatic, Developments of, 424
"Potez 75" Ground-Support Aircraft, 74*
"Princess" Flying Boat at High Altitudes, 331*; Future of, 653
Propeller, Aerial, Forging of Titanium Alloy for Blades of, 373*
— and Helicopter Aerodynamics (Review), 387
Propulsion, Aircraft Theory and Performance (Review), 134
Pulse Jets, "Escopette" and "Ecrevisse," 73*
Rockets, Guided, British, Progress with, 274
— Motor "Super Sprite" (de Havilland Engine Co., Ltd.), 287
Royal Air Force Technical College, Henlow, Courses at, 435
— Aircraft Establishment, Investigation on Wear of Carbon Brushes at High Altitudes, 726
"S.B.5" Adjustable-Wing Research Aircraft (Short Brothers and Harland, Ltd.), 375*
"Sea Mew" Anti-Submarine Aircraft (Short Brothers and Harland, Ltd.), 375*
"Sherpa" Research Aircraft with Aero-Isoclinic Wing (Short Brothers and Harland, Ltd.), 544*, 749*
Stability, Aeroplane. See *Aircraft* (above)
Structures for High-Speed Aircraft, 423
"Super Sprite" Rocket Motor (de Havilland Engine Co., Ltd.), 406*
Target, Towed, High-Speed (Air Service Training, Ltd.), 405*
Test-Bed, Flying, "Canberra" (Rolls-Royce Ltd.), 406*
— — Flying, "Olympus-Canberra" (Bristol Aeroplane Co., Ltd.), 406
— House, Aircraft, and Research Laboratories (Handley Page, Ltd.), 150*
Thrust-Spoiler, Jet, Demonstration of, 73
Transport, Air. See *Air Transport* (above)
"Trident" Experimental Supersonic Aircraft, 74*
Undercarriage for Naval Aircraft (British Messier, Ltd.), 799*
"Valiant" Mark 2 Bomber Aircraft (Vickers-Armstrongs Ltd.), 374*
"Vautour" Twin-Jet Military Aircraft, 74*
"Victor" Bomber Aircraft (Handley Page, Ltd.), 374*
"Viper 3" Jet Aero Engine (Armstrong Siddeley Motors, Ltd.), 329*

Aeronautics—*continued.*
"Vultur" Naval Strike Fighter Aircraft, 74*
Wind Tunnel, High-Speed (Handley Page, Ltd.), 150*
— — for Railway Research, Derby, 564*
— — Supersonic, of Brown Boveri & Co., Ltd., 609*
— — for W. and O. Wright, 737*
Wing, Aircraft, Moulded-Plastic (Bristol Aeroplane Co., Ltd.), 405
World Air Speed Record by "Hawker Hunter," 338, 374*
Wright Jubilee, British Celebration of, 318, 823
See also PARAGRAPH INDEX
Aeroplanes. See *Aeronautics*
Ageing, Strain, in 6-per cent. Tin Phosphor-Bronze, 438
Agricultural Machinery Exhibition and Smithfield Show, 745*, 790*, 810*
— Motors. See *Engines; Motors; Tractors*
— Society, Royal, Blackpool Show, 22*, 44*, 85*, 105*
— Tractors. See *Tractors*
Agriculture. See also *Irrigation* and PARAGRAPH INDEX
Air, Compressed. See *Compressed Air; Pneumatic*
— Compressor, "Alley-Clark" (Alley and MacLellan, Ltd.), 326*
— — Diesel-Driven (Petters, Ltd.), 323*
— — Gas-Turbine Driven, Model of (Harland & Wolff, Ltd.), 394*
— — Horizontally-Opposed Twin-Cylinder (Harland & Wolff, Ltd.), 394*
— — Manufacture of Atlas Diesel Co., Sweden, 499, 641*
— — for 3,500-h.p. Marine Gas Turbine, 491*
— — for 5,400-b.h.p. Marine Gas Turbine, 673*
— — Oil-Free (Broom & Wade, Ltd.), 323*
— — Oil-Free (Williams and James (Engineers), Ltd.), 326*
— — Portable, Petrol-Driven (Maxim Engineering, Ltd.), 791*
— — Sleeve Valve, Portable (Broom & Wade, Ltd.), 322*
— — 4-in. Stroke (Williams and James (Engineers), Ltd.), 326*
— — Swedish, Production of, 499, 641*
— — "Turbomeca" (Blackburn and General Aircraft, Ltd.), 321
— — Twin-Cylinder (E. Allman & Co., Ltd.), 85*
— — Two-Stage (Alley and MacLellan, Ltd.), 326
— — for Wind Tunnel (Brown, Boveri & Co., Ltd.), 610*
— Conditioning in Industry, Control of, 61
— Force, Royal. See *Aeronautics*
— Heater, Gilled-Tube, Bled-Steam (Wellington Tube Works, Ltd.), 417*
— Masses Control Valves for Flows of, 705*
— Pollution. See *Atmospheric Pollution and Smoke Abatement*
Air Products, Inc., Oxygen-Generating Plant, 237*
"Air-Puff" Soot Blower, 393*
— Screws. See *Propellers* under *Aeronautics*
Air Service Training, Ltd., High-Speed Towed Target, 405*
— Supplies, Metered, Instrument for Regulating (Williams and James (Engineers), Ltd.), 63*
— Turbine Accessory Drives for Aircraft (Rotol, Ltd.), 777
— See also *Atmosphere*
Aircraft Carriers. See *Aeronautics*
— Establishment, Royal. See *Aeronautics*
— See *Aeronautics*
Aire and Calder Canal and River Calder, Thermo-Hydraulic Model of, 138. See LETTER, 212
Airscrew Co. and Jicwood, Ltd., Wind Tunnel for Railway Research, 564*
Airstream Direction Detector (Ferranti, Ltd.), 480*
Ala Hydro-Electric Plant, 268*
Albatross Marine, Ltd., "Gay Jane" Motor Fishing Cruiser, 777*
Albula Hydro-Electric Station, Switzerland, 129*
Alcock, W. N., on Life and Activities of E. F. Spanner, 338. See 212
Alexandra Palace Television Station, 573
Alfa-Laval Co., Ltd., Oil Purifier, 259*
Alkali, Etc., Works, Chief Inspector of, Annual Report, 266
Allard Motor Car, 566*
Allen, Edgar & Co., Ltd., Driving Drum Conveyor, 59*. See *Erratum*, 240; Cast-Steel Railway Crossing, 59*; Permanent Magnet, 91*
Allen, Dr. N. P., on Properties of High-Purity Iron Alloys, 773
Allen, W. H., Sons and Co., Ltd., 588-kVA Diesel-Driven Generating Set, 257*; Control Panel for 151 h.p. Electric Motor, 258*; 80-h.p. Slip-Ring Electric Motor, 258*
"Alley-Clark" Air Compressor, 326*
Alley and MacLellan, Ltd., "Alley-Clark" Air Compressor, 326*; Two-Stage Air Compressor, 326; 77-h.p. High-Speed Steam Engine, 326
Allifor Trading Co., Ltd., Vacuum, Induction Melting Furnace, 685*
Allman, E., and Co., Ltd., Agricultural Spraying Equipment, 85*; Twin-Cylinder Air Compressor, 86*; "Genimec" Twin-Spray Rig, 86*
Allowances in Machine Work. See *Gauges*
Alloys. See *Metallurgy; Microphotographs;* PARAGRAPH INDEX
"Alouette" Helicopter, 75*
Alsing Road Works, Sheffield, Millspaugh Centrifugal-Casting Foundry, 594, 629*
Alternating Stress. See *Fatigue* under *Tests (Materials)*
Alternators. See *Generators, Electric; Turbo-Generators*
Aluminium Alloys. See *Alloys* under *Metallurgy*
— Bronze Rods and Forgings, Specification, 768
— Building Construction Exhibition, 120
— Copper in, Analysis, of Specification, 767
— Development Association, Aluminium; Building Construction Exhibition, 120; Investigations on Point Shapes for Aluminium Rivets, 513*
— Diffusion in Copper, 470
— for Motor Fishing Cruiser (British Aluminium Co., Ltd.), 777*
— Rivets, Large, Point Shapes for, Investigations on, 513*
— as Structural Material, 179
— for Wagon Construction, 798
— See also *Metallurgy*
Alway, G. G., on Automatic Computing in Aircraft Engineering, 351. See 344
"Ambrose" Lightship, Navigation Light for (Chance Brothers, Ltd.), 234*
America to Great Britain, Submarine Telephone Cable, 755
— Steam Locomotive in (Review), 273
— See also *United States*
American Locomotive Co., 1,600-h.p. Variable-Gauge Diesel-Electric Locomotive, 233*
— Navy. See *United States* under *Warships*
— Welding Society, Annual Meeting, 586; Adams Lecture on Welding Research in British Merchant Shipbuilding, by R. B. Shepheard, 630. See 586
— See also *United States*
Ammeter. See *Meter* under *Electric*
Ammunition Production in United States, Productivity Team's Report on, 17
Analogies, Dynamical, 763*
Analogue Computor, Description and Application, 477*
Analysers and Computers for Electrical Systems, 147
Analysis, Chemical, of Copper in Aluminium, 767
— Spectrographic, of Low-Alloy Steels, 798
Anderson, J., Aluminium-Alloy Bascule Bridge, Aberdeen, 481*
"Andes," S.S., Stabilisers of, 491
Andrade, Prof. E. N. da C., on Gilberd (or Gilbert) and Science of His Time, 755. See LETTER, 819
Angle Sections, Behaviour of, Report of Investigations on, 286
Anglo-American Aeronautical Conference. See *Aeronautical Conference, Anglo-American* under *Aeronautics*
Anglo-Saxon Petroleum Co., Ltd., Turbo-Electric Oil Tanker "Helix," 619*; Triple-Screw Motor Launch, 680*
Angus, R. H., on Training for Production, 756. See 689. See ADDENDA, 813
Annealing. See *Heat Treatment* under *Metallurgy*
Annfield Plain Factory of Ransome and Marles Bearing Co., Ltd., 467, 555
Annuals and Reference Books, 123, 191, 221, 253, 352, 511, 640. See LITERATURE INDEX
Anstalt für Motorenbau und Konstruktionen, Vaduz, Two-Stroke Oil Engine for Automobiles, 385*, 419*. See ERRATUM, 519
"Antietam," United States Aircraft Carrier with Angled Flight Deck, 52*
Apparatus and Equipment Exhibition, Electronic, Manchester, 183
— and Machines, Electrical, Historical, Exhibition by Crompton Parkinson, Ltd., 466
Appleton, Sir E., on Science for Its Own Sake, 315. See 343
Appointments. See PARAGRAPH INDEX
Apprenticeship. See *Education; Labour*
"Aqualev" Level, 205
Arago, D. F. J., Centenary of, 436
Arc Suppression, Electronic, in Traction Rectifiers (General Electric Co., Ltd.), 773
— See *Electric; Furnace; Welding*
Arch, Logging, for Forestry (D. Brown Tractors (Engineering), Ltd.), 826*
— Parabolic, Two-Pinned, Horizontal Thrust on, 34*
Archdale, J., and Co., Ltd., Experiments on Vibrations of Machine-Tool Structures, 707*
Archer, S., on Design Aid for Shrink-Fit Calculations, 228*
Architects, Naval. See *Naval Architects*
Architecture, Form and Function in, 722
Armstrong Siddeley Motors, Ltd., 14/20 h.p. Twin-Cylinder Diesel Engine, 328*; "Viper ASV3" Jet Aero Engine, 329*
Armstrong, Sir W. G., Whitworth Aircraft, Ltd., Component Parts of "Meteor NF11" Tailplane Aircraft, 404*
Army, Mechanical-Handling Demonstration by, 499
Arnes, H. L., and Co. (Engineering), Ltd., 12-h.p. Diesel-Engined Light Agricultural Tractor, 813*
Arnott, J., on Estimation of Dissolved Oxygen in De-Aerated Water, 103
A.R.O. Machinery, Ltd., Portable Spot-Welding Machine, 323*
Arrol, Sir W., and Co., Ltd., Testing Frame for Ships' Structures, 115*
Arsenal, Woolwich, Report on Future of, 147
Arterial Roads. See *Roads*
Arts, Royal Society of, Arrangements for Celebrating Bicentenary of, 531, 691; Work of Wright Brothers for Aviation, by Capt. J. L. Pritchard, 823. See 818
Asea Electric, Ltd., Automatic Welding Press for Wire Mesh, 291*; Automatic Flash Welder, 291*
Ash-Handling Plant, Uskmouth Power Station, 553*
Ashington Coal Co., Ltd., 1,225-h.p. Automatic Alternating-Current Winding Machine, 774*
Ashwell, Dr. D. G., on Two Axes of Twist in Elastic Prisms, 769*
Askania Regulators for Control of Blast-Furnace Blowers, 762*
Aslib Conference, Nottingham, Classification System of American Society for Metals and Special Libraries Association, by P. E. Colinese, 376
Asquith, W., Ltd., Boring and Milling Machines for Machining Turbine Casings, 97*
Association, British. See *British Association*
— Engineering. See *Institutions*
Astronomer Royal's Annual Report, 125, 211
Astronomy and Radio Research, 315
— for Surveyors, Elements of (Review), 387
Atkins, W. S., and Partners, Ultrasonic Weld-Inspection Plant, 211
Atlantic Liners. See *Ships; Steamers; Motorships*
Atlas Diesel Co., Sweden, Work of, 499; Mining Machinery of, 641*
Atmosphere, Upper, Rocket Exploration of, Conference on, 360
Atmospheric Noise from Lightning, Investigations on, 241
— Pollution and Alkali Works Report, 266
— — Causes, Effects and Prevention, 747
— — and the Law, 787
— — in London, Committee on, 659
— — and Smoke Abatement, 497
— — Work of Fuel Research Board on, 145
— — See also *Smoke Abatement*
Atomic Energy Commission Projects in Ohio, 818
— — Developments in Great Britain, 593
— — Production Establishment, Risley, Work of, 593
— — Project, United Kingdom, Future Organisation of, 657
— — Research Establishment, Harwell, Economics of Nuclear Power Schemes, 345*, 372. See *Erratum*, 375
— Weapon Industry and Nuclear Power, United States, 345*, 372
Atomisation of Liquid Fuels (Review), 803
"Aurelia" Lancia Motor Car, 565*
Australia, Scientific Research in, Report on, 679
Austin-Healey Sports Car, 565*
Austin and Trimingham, "Aqualev" Level, 205
Autogenous Welding. See *Welds* and *Welding*
Automatic Machine Tools. See *Machine Tools*
— Signalling. See *Signalling*
— Stokers. See *Stokers*
Automatic Telephone and Electric Co., Ltd., Electronics in Switching of Telephone Calls, 389, 413*, 445*
Automobiles. See *Motor Cars*
Automotive Products Co., Ltd., Hydraulic Remote-Control Cabinet, 394*
Auxiliary Machinery, Marine. See *Marine*
Aveling-Barford, Ltd., "Calfdozer," 652*; 42-b.h.p. Diesel-Engined Maintenance Grader, 668*
Aveling and Porter, Ltd., 10-ton Steam Road Roller, 214*
Avery, W. and T., Ltd., Push-Pull Fatigue-Testing Machine, 322*; Balancing Machine for Alternator Rotors, 523*
Aviation Traders (Engineering), Ltd., Commercial Transport Aircraft "Accountant," 218; Prestressed Fuselage Construction for Aircraft, 311*
— See *Aeronautics*
"Avon" R.A.14 Axial-Flow Jet Engine, 406
"Avro," Delta-Wing Aircraft, 374*
Axes of Twist in Elastic Prisms, 769*
Aycliffe Factory of Bakelite, Ltd., 715*

B.

BABCOCK AND WILCOX, LTD., Boiler Plant, Singapore Power Station, 283; "Air-Puff" Soot-Blower, 393; Boilers and Coal-Handling Plant, Uskmouth Power Station, 553*; Boiler Plant, Oil Tanker "Helix," 620; Boiler Plant at Trafford Power Station, 676*
Baden, Switzerland, Research Laboratory of Brown, Boveri and Co., Ltd., 609*
Baggage Car, Electric, for British Railways, 764
Bagging Unit, Multi (Scottish Mechanical Light Industries, Ltd.), 791*
Bagnall, W. G., Ltd., Fireless Steam Locomotive, 608*
Baguley, E. E., Ltd., 62-h.p. Electric Mining Locomotive 279*
Bailey Bridge Units, Uses for, 601*
Bailey Meters and Controls, Ltd., Television Water-Level Receiver, 393*
Bakelite, Ltd., Aycliffe Factory of, 715*
Baker, Prof. H. W., on Industry and Technical Education 467
Bala Lake Improvement Scheme, 412
Balancing Machine for Alternator Rotors (C. Schenck G.m.b.H.), 523*
Baldwin Instrument Co., Ltd., Pneumatic Clamping Equipment, 327*
Baldwin Locomotive Works, 2,958-h.p. Electric Locomotive for Netherlands Railways, 65*
Balfour Beatty and Co., Ltd., 275-kV Transmission System, 122*
Baling Machines, Power-Driven (Salopian Engineers, Ltd.), 746*
Ball-Hardness Tests. See *Hardness* under *Tests (Materials)*
Ball, Sir W. V., on Statutory Duty of Employers, 179
Balloons. See *Aeronautics*
Balmforth, N., on Gear Lubrication, 632*. See 627. See LETTER, 692
Balzers, Gerätebau-Anstalt, Vacuum Induction Melting Furnace, 685*
Bamford, J. C., Ltd., Tractor-Operated Loader, 105*; Half-Track Conversion Set for Tractor, 812*
Bamfords, Ltd., Elevating Crop Loader, 44*; 16-h.p. Two-Cylinder Diesel Engine, 44*
Band Conveyors. See *Conveyors*
— Saws. See *Saws* under *Machine Tools*
Bar-Hardening Machine, High-Frequency Induction (General Electric Co., Ltd.), 121*
Barclay, S. F., on Extinguishing Oil Fires, by Fog Nozzles, 787. See 671*
Barford (Agricultural), Ltd., 14-h.p. Multi-Purpose Horticultural Tractor, 45*
Barlow, D. A., on Point Shapes for Large Aluminium Rivets, 513*
Barnard, K. N., on Cathodic Protection of Canadian Naval Vessels, 650
Barnes, D. C., on Interferometer for Measuring Slip Gauges, 757*
Barnett, W. A., the Late, 796
'Baroudeur" Ground-Support Aircraft, 74*
Bascule Bridge. See *Bridges*
Basildon, Essex, Experiments on Dressings for Soil Road at, 793
Bassett, P. R., on Control of Flight, 424
Bassett-Lowke, W. J., the Late, 607
Bath, Hot-Galvanising, 180-kW and 275-kW (Major Electric Furnace Pty., Ltd.), 638*
Battery Vehicles. See *Motor Vehicles; Motor Truck*
Beam, Curved, Stresses in, Determination of, 103*
— Freely-Supported, Vibrations of, 711
— Grillages of, Plastic Design of, 804*
— "I," Combined Bending and Torsion of, 807
— Prestressed-Concrete, Tests at Low Temperatures, 490
Bearing, Copper-Lead, Corrosion of, in Oil Engines, 41*
— Roller, Split (Cooper Roller Bearing Co., Ltd.), 355*
Beaver Committee of Inquiry into Economy in Construction of Power Stations, 498.
Beaver Committee on Air Pollution, Statement of Evidence Submitted, 659; Interim Report, 747
"Beaver" Series-2 Light Transport Aircraft, 406*
Bedford, J., and Sons, Ltd., Examples of Files, 57*
Bedford, R. W., the Late, 522
Bedford, T., Factory Buildings of Tubular Construction, 617*
Beer, A. E., Stockwell Omnibus Garage, 703*
Belgium, Cathodic Protection of Gas Mains, 650
— Public Lighting in, 370
Bell, F. R., on Applications of Small Gas Turbines, 668
Bell, R. J., on Graded Filter for Borehole, 821
Belliss and Morcom, Ltd., Vertical Compound Steam Engine, 215*
Belt Conveyors. See *Conveyors*
Bending Machine. See *Machine Tools*
— Tests. See *Tests (Materials)*
Bentall, E. H., and Co., Ltd., Dynamic Testing of Wire Ropes and Fasteners, 734*; D. Brown-Bentall Disc Harrow, 790*
Beresford, J., and Son, Ltd., Petrol-Driven Pumping Set, 108*; Centrifugal Pump, 653; Automatic Pressure Water Unit, 653*
Bergwerk, W., on Problems of Fluid-Flow Measuring Devices, 244*. See 6*, 35*
Berthiez, C., Vertical Boring Machine at Tank Factory, Leyland, 631*
Bertram, J., and Son, Ltd., Electronically-Controlled Paper-Making Machine, 595*
Bessemer Process and Open-Hearth Furnace Relative Costs, 701
"Beverley" Military Transport Aircraft, 405*
Beznau Gas-Turbine Power Station, Switzerland, 611*
Bicentenary of Royal Society of Arts, Arrangements for Celebration of, 531, 691
Bicycles. See *Cycles* and *Motor Cycles*
Bilbow, T., Surrey Docks Substation, London Transport Executive, 437*; Stockwell Omnibus Garage, 703*
Billingham and Wilton Works of Imperial Chemical Industries, Ltd., 94
Billings, A. W. K., and Water Power in Brazil (Review) 803
Binary Alloys. See *Alloys* under *Metallurgy*
Binnie, Deacon and Gourley, Bala Lake Improvement Scheme, 412
Biplanes. See *Aeronautics*
Birkenhead Gasworks, Stockpiling and Loading Equipment, 822*
Birlec, Ltd., Compressed-Air Drier, 292*
Birmingham, Engineering Centre, Plans for, 429
— Industrial Research Laboratories, Tests of Wire-Rope Grips, 734*
— Museum of Science and Industry, Opening of Engineering Hall, 214*. See LETTER, 276*
Bishop, H., on British Broadcasting Service, 543, 573. See 499
Bituminous Materials, Road Construction. See *Roads* and *Tar*
Black, Carbon, Lorry for Bulk Transport of, 429*
Blackburn, A. B. E., the Late, 435
Blackburn and General Aircraft, Ltd., "Turbomeca" Gas Turbine and Compressor, 321; "Beverley" Military Transport Aircraft, 405*
Blackett, J., Uskmouth Power Station, 552*
Blackpool, Royal Agricultural Show, 22*, 44*, 85*, 105*
Blade, Marine Propeller, Planing of, 520
Blading, Gas Turbine, Comparator for Root Serrations of (British Indicators, Ltd.), 158*
— for 3,500-h.p. Marine Gas Turbine, 491*
— Turbine, Microscope for Edges of (Taylor, Taylor and Hobson, Ltd.), 192*
Blair, Dr. J. S., on Calculation of Thickness of High-Temperature Steam Pipes, 549. See LETTER, 723
Blanch, A. B., and Co., Ltd., Portable Elevator, 85*; Front-Mounted Side-Delivery Rake, 85*
Blast Furnaces. See *Furnaces*
Blasting Explosives, Manufacture in India, 627
Blaw Knox, Ltd., "Hico" Falsework Centring, 447
Blin, J., on Diffusion of Zinc and Aluminium in Copper, 470

Blithfield Reservoir, 598*
Blower, Electrically-Driven, at Dovercourt Yeast Factory, 76*
— Roots, with Filter and Silencer (Sir G. Godfrey and Partners, Ltd.), 262*
Blowpipe Equipment, Oxy-Acetylene Powder Cutting (British Oxygen Co., Ltd.), 258*
— See also *Welding ; Cutting*
B.M.W. Motor Car, 566*
Board of Trade, Monopolies Commission and Semi-Manufactures of Non-Ferrous Metals, 179 ; "Revolving" Fund for Industry, 243 ; Census of Production for 1954, 380 ; Report on British Industries Fair, 721 ; Letter on Export Trade, 787
Boat, Flying. See *Aeronautics*
— Motor. See *Motor Boat*
Bock, A. F., the Late, 47
Bode, F., & Son, Ltd., Positioning Appliance for Welding Work, 602* ; Clamping Machine for Strip Welding, 726*
Boereboom, A., on Public Lighting in Belgium, 370
Bogie for 1,500-h.p. Diesel-Electric Locomotive, 172*
— for Electric Locomotive, Improved Riding Control for, 285*
— Four-Wheeled, for 1,000-h.p. Diesel-Electric Locomotive, 139*. See *Addendum*, 212
— Frame for 2,958-h.p. Electric Locomotive, 65*.
— Railway, Rubber Suspension of, Experiments on, 830*
— for Single-Deck High-Speed Tramcars (Maley & Taunton, Ltd.), 124*. See 254*. See *Erratum*, 199
— Variable-Gauge, for 1,600-h.p. Diesel-Electric Locomotive, 233*
Boiler for Aero-Engine Factory at East Kilbride (J. Thompson (Wilson Boilers), Ltd.), 717*
— Babcock & Wilcox, with Controlled Superheat, Model of, 393*
— Babcock & Wilcox, Oil Tanker "Helix," 620
— Babcock & Wilcox, Singapore Power Station, 283
— Babcock & Wilcox, Uskmouth Power Station, 553*
— with Chain Grate, Effect of Coal Properties on Combustion in, 61
— Control, Unified, at Trafford Power Station, 676*
— Drums, Forged (T. Firth & J. Brown, Ltd.), 90*
— — Hollow-Forged (English Steel Corporation, Ltd.), 702*
— Feed Water. See *Water*
— — Water Softening. See *Water*
— Furnaces. See *Furnace* and *Stoker*
— La Mont, at Tank Factory, Leyland, 631*
— Marine, with Controlled Superheat, Model of (Babcock & Wilcox, Ltd.), 393*
— — Investigations on Corrosion in, 428, 434
— — "Weldex" Bled-Steam Air Preheater for (Wellington Tube Works, Ltd.), 417*
— Mercury, Use of Titanium in, 455
— Plant for British Power Stations, 827
— — Prevention of Atmospheric Pollution by, 145
— Pulverised-Fuel, Electrostatic Precipitators for, 776
— for Solar Energy Schemes, 370*, 400*
— Vertical, Triple-Pass (Fraser & Fraser, Ltd.), 318*
— Water Level, Television Receiver (Bailey Meters & Controls, Ltd.), 392*
— See also *Engines and Boilers* in PARAGRAPH INDEX
Bolinder's Co., Ltd., 33-h.p. Diesel Engine, 260* ; 150-h.p. Six-Cylinder Diesel Engine, 260
Bolts and Nuts, for Aircraft, Steel and Aluminium-Alloy, Specification, 15
— Screws and Nuts, Black, Specification, 606
Boltwood Engineering, Ltd., Storage Shed of Timber Construction, 796*
Bombing Aeroplane. See *Aircraft* under *Aeronautics*
Bond, F. W., the Late, 586
Bond, R. C., on Motive Power in British Railways, 439
Bonding Process for Friction Linings (T. Broadbent & Sons, Ltd.), 583
Books, New, Notes on, 31, 64, 96, 127, 192, 255, 287, 319, 351, 384, 415, 448, 479, 576, 607, 672, 704, 736, 800, 831. See LITERATURE INDEX
— Received, 32, 64, 96, 128, 160, 192, 224, 256, 288, 320, 352, 384, 416, 448, 480, 544, 576, 608, 640, 672, 704, 736, 768, 832
Boreholes. See *Wells*
Borg & Beck Motor Car, 566*
Boring Machine. See *Machine Tools*
Bottles, Winchester, Specification, 798
Bouasse, Prof. H., the Late, 788*
Boughton, T. T., & Sons, Ltd., Heavy-Duty Winch for Tractors, 790* ; Mechanical Equipment for Forestry, 826*
Boulton Paul Aircraft, Ltd., "P.111A" Delta-Wing Research Aircraft, 375* ; Mechanism for Varying Mechanical Ratios of Aircraft Control Systems, 701*
Bourdon Tools, Ltd., Surface Grinding Machine, 511* ; Variable-Speed Gear and Pulley Drives, 820*
Bowing Operation on Pearl Scale (G. Ibberson & Co.), 91*
Bowser, Monks & Whitehouse, Ltd., Fryma Milling and Grease-Producing Plant, 253*
Box, Carrier, Tractor-Mounted (Taskers of Andover (1932), Ltd.), 45*
— Spar for Aircraft (Short Brothers & Harland, Ltd.), 404*
— Tin, Making Machinery (F. J. Edwards, Ltd.), 460*
— Transport for Tractor (Whitlock Brothers, Ltd.), 790*
Brace, A. W., on Point Shapes for Large Aluminium Rivets, 513*
Brakes, Motor-Car, Work of Road Research Board on, 177
Brandes, E. A., on Properties of Chromium and Its Alloys, 541
Branson Instruments Inc., Ultrasonic Flaw Detector for Rails, 11*. See *Addendum*, 412
Brass, Corrosion of. See *Corrosion*
— Foundry. See *Foundry*
Brazil, A. W. K. Billings and Water Power in (Review), 803
Breakdowns. See *Accidents*
Breakwater, Pneumatic, at Bull's Bridge Research Laboratory, 120, 138*. See LETTER, 212
"Breguet Deux Ponts" Aeroplane, 169*
Breguet "Vultur" Naval Strike-Fighter Aircraft, 74*
Brick-Making Plant, Circular-Kiln (Clarks Kilns (N.S.W.) Pty., Ltd.), 825*
Bridge, Bascule, Double-leaf, Victoria Dock, Aberdeen, 481*
— Plate-Girder, Diffusion of Load into Decks of, 645*
— Prestressed-Concrete, Behaviour of, 551
— Reinforced-Concrete, Blithfield Reservoir, 598*
— Removable, Steel, Victoria Dock, Aberdeen 481*
— World's Great (Review), 546
— See also *Viaduct ;* and PARAGRAPH INDEX
Brightside Foundry & Engineering Co., Ltd., Reversing Rolling Mill for Alloy Steels, 59* ; Large Ingot Mould, 90*
Brinell Tests. See *Hardness* under *Tests (Materials)*
Bristol Aeroplane Co., Ltd., "Britannia" Air Liner, 331 ; Moulded-Plastic Wing, 405 ; "Olympus Canberra" Flying Test-Bed, 406
Britain's Fuel and Power Resources, Conservation of, 735
"Britannia" Air Liner, 331
"Britannia" Royal Yacht, Preliminary Trials, 622
Brookhirst Switchgear, Ltd., Starters for Electric Motors, 326*
British Aircraft Constructors, Society of, Aircraft Exhibition and Flying Display, Farnborough Aerodrome, 307, 330*, 374*, 404*
British Aluminium Co., Ltd., All-Welded Aluminium-Alloy Motor Yacht "Morag Mhor," 180* ; Aluminium-Alloy for Bascule Bridge, Aberdeen, 481* ; Aluminium for Motor Fishing Cruiser, 777*

British Association :

Liverpool Meeting :
Inaugural Proceedings, 343
Presidential Address by Sir E. Appleton on Science for Its Own Sake, 315. See 343
Section G (Engineering) :
Programme, 169
Reports of Discussions, 343, 372, 389, 422, 455, 517
Presidential Address by Lord Dudley Gordon on Engineering in Next Two Thousand Years, 381. See 343
Visits and Excursions, 517
Utilisation of Electronic Computers in Engineering Practice, by R. K. Livesley, 349. See 343
Automatic Computing in Aircraft Engineering, by G. G. Alway, 351. See 343
Outlook for Economic Nuclear Power, by Dr. B. L. Goodlet, 345*. See 372. See *Erratum*, 375
Solar Energy : Past, Present and Future Applications, by Dr. H. Heywood, 377*, 409*. See 372
Use of Electronic Methods in Telephone Switching, by L. J. Murray, 413*, 445*. See 389
Application of Colour to Television Broadcasting, by F. C. McLean, 441*. See 389
District Heating, by A. E. Margolis, 473*, 507*. See 422
Measurement of Efficiency of Heating in Buildings, by A. T. Pickles, 422
Design of Creep-Resisting Steels, by E. W. Colbeck, Dr. J. R. Rait and J. O. Ward, 505*, 537*. See 455
Titanium : A Metal of Engineering Importance? by Major P. L. Teed, 603*, 635. See 455. See LETTERS, 756, 787
The Isodynamometer, by J. Wright, 665*. See 517
Combined Magnetisation of Magnetic Materials, by Dr. J. E. Parton and Dr. W. D. Sutherland, 697*, 731. See 517
Engineering Applications of Calorimetry with Particular Reference to Magnetic Steels, by K. L. Morphew, 765. See 517
Dynamical Analogies, by R. Yorke, 763*. See 517
Joint Meeting with Section J (Psychology) :
Use of Motion Study in Increasing Productivity, by A. G. Shaw, 390
Techniques in Motion and Time Study, by W. Rodgers, 390
British Broadcasting Corporation, Television Developments, 24 ; Receiver for Monitoring Service, 137* ; Magnetic Tape Recording Equipment for, 381 ; Work of, 499, 543, 573 ; Sound and Television Broadcasts of Coronation Ceremonies, 775
— Cast Iron Research Association, Pneumatic Clamp for Shell Moulds, 296* ; Annual Report, 586
— Coal Utilisation Research Association, Opening of New Laboratory, 20 ; Investigation on Combustion in Boiler with Chain Grate, 61 ; Annual Report, 88 ; Annual Luncheon, 563
British Combustion Equipment, Ltd., Safety Mechanism for Oil Burner, 634*
— Commonwealth Scientific Office, Review of Science in United States, 690
— Constructional Steelwork Association, Report on Behaviour of Angle Purlins, Ties and Struts, 286
— Consulting Engineers, Professional Code of, 658
— Council, Annual Report, 627
— Cycle and Motor Cycle Manufacturers and Traders Union, Ltd., Cycle and Motor Cycle Show, 659
— Electrical and Allied Manufacturers Association, Annual Dinner, 659
— — Development Association, Testing Laboratory for Domestic Appliances, 489*
— Electricity Authority, Trials of Submarine Cables Between England and France, 31, 170* ; Power Stations on Tyne and Teeside, 94 ; 275-kV Transmission System, 122* ; Annual Report, 466 ; Uskmouth Power Station, 552* ; Fireless Steam Locomotive, 608* ; Memorandum on Parallel Operation of Public and Private Electricity Systems, 626 ; First Five Years of, 663 ; Unified Boiler Control at Trafford Power Station, 676* ; 132-kV Three-Core Cable Installation, 695 ; Hollow-Forged Boiler Drums for, 702* ; Coal Storage at Hackney Power Station, 727* ; Review of Work of, 827
— European Airways, Annual Report, 467 ; Revenue from Aircraft of, 635. See LETTERS, 786, 787
— Foundrymen, Institute of, Report on Economic Utilisation of Copper-Base Alloys, 222 ; Shell Moulding Process, by D. N. Buttrey, 251, 285
— Gear Manufacturers Association, Luncheon, 627 ; Gear Lubrication, by N. Balmforth, 632. See 627. See LETTER, 692
— Hydromechanics Research Association, Feeder for Hydraulic Transport of Coal, 296*
— Independent Air Transport Association, Annual Report, 746
British India Steam Navigation Co., Ltd., Aluminium-Alloy Motor Launch for Pakistan, 416*
British Indicators, Ltd., Comparator for Turbine-Blade Root Serrations, 158*
— Industries Fair, Report on Future of, 721
— — Federation of. See *Federation*
British Insulated Callender's Cables, Ltd., 132-kV Three-Core Cable Installation, 695
British Insulated Callender's Construction Co., Ltd., Use of Rocket for Conductor Stringing, 114 ; 275-kV Transmission System, 122* ; Portable Aluminium-Alloy Mast, 127* ; 50-Cycle Single-Phase Electrification, Lancaster-Morecambe-Heysham Line, 459*
— Internal Combustion Engine Research Association, Luncheon, 83 ; Work of, 607*
— Iron and Steel Productivity Team, Views on Milling of Rail Ends, 299
— — and Steel Research Association, North-East Coast Laboratories, 116* ; Sheffield Laboratories, 683*
— Manufacturers of Petroleum Equipment, Council of, Tenth Anniversary Luncheon, 531
British Messier, Ltd., 4,000-lb. per sq. in. Hydraulic System, 766* ; Undercarriage for Naval Aircraft, 799*
— Meteorological Office, Automatic Radar Meteorological Station, Crawley, 299*
— Navy. See *H.M.* under *Warships*
— Non-Ferrous Metals Federation, Annual General Meeting, 51
— Overseas Airways Corporation, Annual Report, 435 ; Revenue from Aircraft of, 635. See LETTERS, 756, 787 ; Future of "Princess" Flying Boat, 653 ; "Comet" Air Liners, Service Results of Fleet, 692
British Oxygen Co., Ltd., Powder-Cutting Blowpipe Equipment, 258*
British Polar Engines, Ltd., 600-b.h.p. Six-Cylinder Diesel Engine, 391* ; 200-kW Diesel-Driven Marine Generating Set, 391*
— Productivity Council, Report of Productivity on Ammunition, 17 ; Report on Fuel Conservation, 338 ; Reports on Production Control and Design for Production, 530 ; Formation of National Industrial Fuel Efficiency Service, 562
— Railway Derby, Research Department, Use of Electrical Resistance Strain Gauges on Concrete Structures, by J. C. Lucas and R. Newsham, 487
— — Decentralisation of, 20. See LETTER, 84 ; Report on Harrow-Wealdstone Collision, 49, 53. See LETTER, 147 ; Rolling Stock Programme, 51 ; Tests of Steam and Diesel Locomotives, 305 ; Standard 2-6-2 Tank Locomotive, 348* ; Signal-Spectacle Glazing, 349* ; 75-b.h.p. Diesel-Electric Mobile Crane, 395* ; Crewe Pupils' and Premium Apprentices' Annual Dinner, 403 ; Teaching of Locomotive Driving and Firing Duties, 433 ; Effect of Transport Act, 1953, 434 ; Booklet on Railway Civil Engineering as a Career, 435 ; Motive Power on, 439 ; Lancaster - Morecambe - Heysham Line, 50-Cycle Single-Phase Electrification, 459* ; Use of Electrical Resistance Strain Gauges on Concrete Structures, by J. C. Lucas and R. Newsham, 487 ; British Transport Commission Annual Report, 561 ; Wind Tunnel for Railway Research, 564 ; Electric Baggage Car, 764 ; Tool for Deep-Level Grouting, 770* ; Experimental Wagon of Aluminium Construction, 798
British Reinforced Concrete Engineering Co., Ltd., Foundations for Large Universal Boring Machine, 449*
British Ropes, Ltd., Braided Wire-Rope Sling, 357*
British Shipbuilding. See *Shipbuilding*
— Shipping. See *Shipping*
— Standards Institution. See *Standards*
— Steel Castings Research Association, Liquid-Metal Sampling Apparatus, 735*
— — Founders' Association, Annual Dinner, 755
British Thomson-Houston Co., Ltd., Machine Tools for Machining Turbine Casings, 97* ; Transformers for 275-kV Transmission System, 122* ; 500-h.p. Generator for Diesel-Electric Locomotive, 139*. See *Addendum*, 212 ; Electronic Motor-Control Cubicle, 259* ; Electrical Equipment for Diesel-Electric Cargo Ship, 260 ; 45-MVA 660-Volt Air-Break Switchgear, 259* ; Armature for "Stavolt" Alternator, 259* ; Electric Motor at Shepcote Lane Works, Sheffield, 333*, 365* ; Large Universal Boring Machine, 449* ; Booklet on Training Electrical Testers, 470 ; Electrical Equipment for Paper-Making Machine, 595* ; 8,300-s.h.p. Turbo-Electric Machinery, Oil Tanker "Helix" 620
— Trade. See *Trade*
— Transport Commission, Appointment of General Sir B. Robertson to Chairmanship, 243 ; Locomotive Driving and Firing, 433 ; Scheme for Railway Reorganisation, 434 ; Annual Report, 561 ; and National Union of Railwaymen, 787
British Twin Disc & Clarifiers, Ltd., Diesel-Driven Arc-Welding Machine, 324*
— Waterworks Association, Statement on Nationalisation, 371
— Welding Research Association, Annual Report, 114
Brittle Fracture of Iron Alloys, 772
— Fracture of Steel, Glasgow Conference on, 70, 187, 220. See 639
Broaching Machine. See *Machine Tools*
Broadbent, T., & Sons, Ltd., Electrically-Driven Sugar Centrifugal, 293* ; Bonded Friction Linings for Clutch, 583
Bronx Engineering Co., Ltd., 30-ton Press Brake, 265*
Bronze, Phosphor, 6 Per Cent. Tin, Strain-Ageing in, 438
Broom & Wade, Ltd., Portable Sleeve Valve Air Compressor, 322* ; Oil-Free Air Compressor, 323*
Brooke-Bradley, H. E., on Road Construction in Worcestershire, 681
Brooks (Oldbury), Ltd., Strip Shearing Machines, 365. See LETTER, 436*
Broun-Morison, H., Model of L. Mond's Laboratory, 1888, 87*
Brown, Boveri & Co., Ltd., Riding Control for Locomotive Bogie, 285* ; Fluid Mechanics and Combustion Research Laboratory, 609*
Brown Brothers & Co., Ltd., Stabilisers of S.S. "Andes," 491
Brown, D., & Sons (Huddersfield), Ltd., Significance of Izod Test in Gear Design, 166,* Five-Speed Constant-Mesh Gearbox, 191*
Brown, D., Machine Tools, Ltd., 100-in. Hobbing Machine for Turbine Gears, 203* ; Shaving Machine for 220-in. Gears, 730*
Brown, D., Tractors, Ltd., 32·5-b.h.p. Four-Cylinder Marine Diesel Engine, 327* ; 31·3-b.h.p. Diesel-Driven Agricultural Tractors, 790*
Brown, D., Tractors (Engineering), Ltd., Mechanical Equipment for Forestry, 826*
Brown, J., on Tests of Launching Greases, 468
Brown, J. & Co., Ltd., Tests of Launching Greases, 468 ; Shaving Machine for 220-in. Gears, 730*
Brush Electrical Engineering Co., Ltd., Balancing Machine for Alternator Rotors, 523* ; Switchgear Factory, Loughborough, 569*
Brushes, Carbon, Wear of, at High Altitudes, Investigation on, 726
Bryce Burger, Ltd., Pressure Gauge Plunger, 670*. See *Addendum*, 736
B.S.A. Tools, Ltd., Centreless Grinding Machine, 476*
Bucket Conveyor. See *Conveyor*
— Dragline, 12-cub. yd. (Hadfields, Ltd.), 59*
Buckle, G. H., & Partners, Development of London Airport, 397*
Bückle, Dr. H., on Diffusion of Zinc and Aluminium in Copper, 470
Buckling of Strut with Elastically-Fixed Ends, 67*
Buhrs & Zonen N.V., Variable-Speed Gear and Pulley Drives, 820*
Building Construction, Aluminium, Exhibition of, 120
— — See also *Concrete, Reinforced* and PARAGRAPH INDEX
— Crane, Self-Erecting (Abelson & Co. (Engineers), Ltd.), 648*
— Design and Research, of C. A. Parsons & Co., Ltd., 713*
— Factory, of Tubular Construction (Tubewrights, Ltd.), 617*
— Light-Gauge Steel Used in, Protection Against Corrosion, Specification, 606
— Materials, Portable Petrol-Driven Elevator for (M. B. Wild & Co., Ltd.), 189
— Model By-Laws for, 318
— Multi-Storey, Prestressed-Concrete, for Post Office, 667
— of Power Stations, Economy in, Report on, 498
— Research in Australia, 679
— — Station, Vibrating-Wire Strain Gauge for Tests on Structures, by R. J. Mainstone, 153* ; Researches on Heating in Buildings, 422; Exhibits at Building Exhibition, 727
— Trades Exhibition, Olympia, 652*, 727*
Buist, C., on Availability and Distribution of Smokeless Fuels, 498
Buist, D. M., on Electrical Equipment Export Trade, 594

Bull's Bridge, Hayes, Hydraulic Research Laboratory at, 120, 138*. See LETTER, 212
Bunyan, T. W., on Investigations on Ships, Hull and Machinery Defects, 528
Burmeister and Wain, M.S. "Samoa," 217*
Burners, Oil Fuel. See *Oil Fuel*
Burrill, Prof. L. C., on Marine Propeller Manufacture, 520
Burvagn Dam on Julia River, Zürich, 129*
Buscot Waterworks, Water-Treatment Plant, 493
Bushing Co., Ltd., Hebburn Works of, 95
Business and Public Affairs, Files, Facts and Action in (Review), 484
Bustard, J. H., on Road Transport Afloat, 522
Butler, P., the Late, 436
Butterley Co., Ltd., Oxygen-Generating Plant, 237*
Button, A., & Partners, Ltd., Stockwell Omnibus Garage, 703*
Buttrey, D. N., on Shell Moulding Process, 251, 285

C.

CABLE COVERS, LTD., Jacking Unit for Prestressing Concrete, 606*
— See also *Wire Ropes* and *Electric*
Cairo, Meadi, Shuman-Boys Solar Boiler at, 380*
Caisson, Reinforced-Concrete, for Uskmouth Power Station, 552*
Calder, River, and Aire and Calder Canal, Thermo-Hydraulic Model of, 138. See LETTER, 212
"Calfdozer" (Aveling-Barford, Ltd.), 652*
Callenfels, G. W. van S., on International Flame-Radiation Research at Ijmuiden, 555*. See 488
Calorimetry Applied to Magnetic Steels, 517, 765
Camborne, Cornwall, East Pool Mine, Pithead-Gear Collapse at, 402
— Museum, Holman Brothers, Ltd., Rostowrack Cornish Engine at, 341*, 371
Cambrian Wagon & Engineering Co., Ltd., Wagon with Aluminium Plating, 798
Camera, Television, Underwater, Marconi-Siebe Gorman (Siebe, Gorman & Co., Ltd.), 358*
Canada, Energy Consumption in, 820
— Scottish Council (Development and Industry), Mission to, 819
Canadian Bank of Commerce, Letter on Energy and Economic Development, 820
— Naval Vessels, Cathodic Protection of, 650
Canal, Aire and Calder and River Calder, Thermo-Hydraulic Model of, 138. See LETTER, 212
— Grand Contour, Project for, 741*
— Irrigation, in United States, Sediment Problems in, 1
— See also PARAGRAPH INDEX
Cantilever Bridge. See *Bridge*
— Prismatic Elastic Axes of Twist in, 769*
Canvin, S. D., Glasgow Water-Supply Extensions, 240
"Capable," H.M. Steam Tug, Variable-Pitch Propeller of, 582*
Cape Town, Model of Table Bay Harbour, Measurement of Wave Heights in, 245*, 267*
Capstan Lathe. See *Lathe* under *Machine Tools*
"Capsule" Pump for Transformer Oil, 355*
Cars, Motor. See *Motor Cars*
— Rail. See *Carriages, Railway*
"Caravelle" Air Liner, 76*
Carbon, Activated, Properties and Applications of (Review), 4
— Black, Lorry for Bulk Transport of, 429*
— Brushes, Wear of, at High Altitudes, Investigation on, 726
Cardiff Docks, Tank-Cleaning Plant for Oil Tankers at, 149*
Cardon Refinery, Venezuela, Model of Pumping Plant at (Sigmund Pumps, Ltd.), 394*
Cargo Handling Co-ordination Association, International, *Unit Load and Palletisation Symposium:* Unit Loads and Palletisation, by B. Garoche and A. Vinceti, 522; Road Transport Afloat, by J. H. Bustard, 522; Case for Palletisation, by D. R. Woodley, 522; Ship Types and Through Transport, by A. C. Hardy, 522
— — by Fork-Lift Trucks and Pallets, 522
— Steamers. See *Steamers*
Carriage, Railway, Air-Conditioned (Craven's Railway Carriage & Wagon Co., Ltd.), 59*
— — Building Programme, British Railways, 51
— — Electric, for Baggage, 764
Carrier Box, Tractor-Mounted (Taskers of Andover (1932), Ltd.), 45*
Carron-Parlanti, Ltd., "Niforge" Die Casting, 762
Carter, T., the Late, 60
Cashmore, W. P., on Flame Radiation in Open-Hearth Furnaces, 725. See 744
Cast-Iron Flanged Pipes and Flanged Fittings, Specifications, 767
— — Research Association, British, Pneumatic Clamp for Shell Moulds, 296*; Annual Report, 586
Castelo do Bode Hydro-Electric Power Plant, 660*
Casting, Copper-Base Alloy, Economy in Production of, 222
— Die, "Niforge" (Carron-Parlanti, Ltd.), 762
— Machine, Centrifugal, Millspaugh, Ltd., 594, 629*
— — Continuous, for Copper Ingots (Sheppard & Sons, Ltd.), 809*
— Steel, "Centrispun" (Firth-Vickers Stainless Steels, Ltd.), 91*
Catalogues. See *Trade Publications*
Caterpillar Tractor. See *Tractor*
Cathodic Protection of Buried or Submerged Structures, 287. See *Erratum*, 299
— — Conference on, 650
— — of Pipelines and Storage Tanks, Russian Book on (Review), 659
C.A.V., Ltd., Starter for Oil Engine, 325*; Marine Searchlights, 326*; Electric Starter Motor for Oil Engines, 791*
Caversham Park, Reading, Receivers for Broadcast Monitoring Service, 137*
C.D., Etablissement, Mobile Sawmill, 776*
Ceannacroc Hydro-Electric Scheme, Cluanie Dam at, 557*. See *Erratum*, 640
Celluloid Models, Stress Determination by. See *Photo-Elastic*
Cement, Blast-Furnace Slag, Use at Cluanie Dam, 557*. See *Erratum*, 640
— and Concrete Association, *Pavings Development Group:* Recent Progress in Soil-Cement for Road Construction, by D. J. Maclean, 681; Road Construction in Worcestershire, by H. E. Brooke-Bradley, 681; Road Construction in Urban Areas, by H. L. Kerr, 681; Progress in Concrete Road Construction, by Dr. A. R. Collins, 724; German Motor Roads, by Dr. E. W. Goerner, 724; Some Aspects of Economics of Concrete Roads, by P. H. T. Gooding, 724; Exhibits of Association at Building Exhibition, 727
— Transporter and Silo for Bulk Handling 109*
— Works, Dust from, 266
— See also *Concrete* and PARAGRAPH INDEX
Census of Production for 1954, Board of Trade, 380
Centenary of Wear Shipbuilders' Association, 398
— of D. F. J. Arago, 436
— See also *Bicentenary;*
Centrifugal Pumps. See *Pumps*
— Sugar, Electrically-Driven (T. Broadbent & Sons, Ltd.), 293*
Centrifuge for Heavy Fuel Oils (Sharples Centrifuges, Ltd.), 798*
"Centrispun" Steel Castings (Firth-Vickers Stainless Steels, Ltd.), 91*
Centurion Tank, Factory for Production of, Leyland, 630*
Chadwick, R., on Stretcher-Strain Markings in Aluminium Alloys, 438
Chain-Track Tractor. See *Tractor*
Chamberlain & Hookham, Ltd., Relay for Control of Reactive Power, 671*
Chamberlain Industries, Ltd., Hand-Operated Two-Stage Hydraulic Pump, 64*
Chance Brothers, Ltd., Lighthouse Apparatus, 216*; Navigation Light for "Ambrose" Lightship, 234*
Change-Speed Gear. See *Gear*
Channels, Fluid-Flow Measuring Devices for, 6*, 35*. See LETTER, 244*
— Section, Axes of Twist in, 769*
Charging Machine, Furnace-, 40-h.p. Diesel-Engined (Conveyancer Fork Trucks, Ltd.), 412*
Charlton, R. B., the Late, 14
Charrold, Ltd., Retail Handling Equipment for Coal and Coke, 605*
Chassis of Austin-Healy Car, 565*
— of B.M.W. Car, 566*
— of Jowett "Jupiter" Car, 565*
— of Mercedes-Benz Car, 587*
— of Tubular Construction, Allard Motor Car, 566*
Chemical Analysis. See *Analysis*
— Engineers, Institution of, Chemical Engineering Conference, Programme, 21
— — Training of, 401
— Industry, Society of, Chemical Engineering Conference, Programme, 21; *Corrosion Group, Symposium on Cathodic Protection:* Cathodic Protection in Relation to Engineering Design, by K. A. Spencer, 650; Influence of Composition of Magnesium Anodes on Their Efficiency, by M. Oudeman, 650; Development of Cathodic Protection in Belgium, by A. Weiler, 650; Economic Aspects of Corrosion Control, by D. H. Lewis and O. C. Mudd, 650; Cathodic Protection and Control of Corrosion in Middle East, by W. C. R. Whalley, 650; Cathodic Protection as Applied to Royal Canadian Naval Vessels in Active Service, by K. N. Barnard, 650; Cathodic Protection, Its Application to Ships and Establishments of Royal Navy, by J. T. Crennell, 650
— — Use of Radioactive Materials in, 157
— Plant Exhibition, Olympia, 11, 21, 237*, 257*, 289* (See *Erratum*, 361), 321*, 353*, 391*
— — Symbols on Flow Diagrams, Specification, 798
— Research Laboratory, Annual Report, 428, 434; Investigation on New Sources of Selenium, 569
— Works, Chief Inspector's Report, 266
Chemistry of Corrosion. See *Corrosion*
— Research Board and Laboratory, Annual Report, 428, 434
— Work of W. H. Wollaston in, 614
— See also PARAGRAPH INDEX
"Cheshire" Petrol-Driven Trench Digger, 106*
Chesterman, J. & Co., Ltd., Precision Measuring Instruments, 58*
Chesters, W. T., on Izod Test in Gear Design and Performance, 166*
Chilver, Dr. A. H., on Diffusion of Load into Decks of Girder Bridges, 645*
Chromium and Its Alloys, Properties of, 541
— Electroplated Coatings of, Specification, 829
Chuck. See *Machine Tools*
Circular Saws. See *Saws* under *Machine Tools*
Circulating Pumps. See *Pumps*
Cities, Industrial, Smokeless Zones in, 83, 498
Citroen 2 CV Motor Car, 534*
Civil Aviation. See *Aeronautics*
— Engineering, Railway, as a Career, Booklet on, 435

Civil Engineers, Institution of:

Awards for Papers, 19
Awards to Graduates and Students, 224
Presidential Address by W. P. Shepherd-Barron on London Docks, 637

Civil Engineers, Institution of—*continued.*

Construction of Two Concrete-Lined Tunnels for Machkund Hydro-Electric Project, South India, by G. A. Gauld and R. J. Newport, 683
Design and Construction of High-Speed Test Track for Motor Vehicles, by R. Freeman and J. A. Neill, 747
Civilisation, Western, and Engineering (Review), 195
Clamp, Pneumatic, for Shell Moulds, 296*
Clamping Machine for Strip Welding (E. Bode & Son, Ltd.), 726*
Clarke, Chapman & Co., Ltd., Gateshead Works of, 95; Coal-Pulverising Mill, 354*; Self-Contained Cargo Winch, 354*
Clarks Kilns (N.S.W.) Pty. Ltd., Circular-Kiln Brick-Making Plant, 825*
Classifier, Vibratory, for Materials (Holman Brothers, Ltd.), 189*
Clayton, Dr. T. M., on Smokeless Zones, 498
Cleaning Machine for Floors, Battery-Driven (S. E. Cowlard, Ltd.), 831*
Clements, V., on First Five Years of Nationalised Electricity Supply, 663
Cleveland and Northern Counties, Notes from, 14, 46, 78, 110, 142, 174, 206, 238, 270, 302, 334, 366, 398, 430, 462, 494, 526, 558, 590, 622, 654, 686, 718, 750, 782, 814. See PARAGRAPH INDEX
— Scientific and Technical Institution, Dorman Long Harold Wright Lecture on Steelmaking Related to Blast-Furnace Practice, by J. Mitchell, 701
Cliff, J. S., on Insulation of High-Voltage Electrical Installations, 767
Climate. See *Meteorological*
Climax Rock Drill & Engineering Works, Ltd., Drilling Machine with Air-Hydraulic Feed Unit, 260*
Clocks at Royal Observatories, 126
— Tower, Electronic Chiming Installation for (Gent & Co., Ltd.), 664
Cluanie Dam, Slag Cement Plant at, 557*. See *Erratum*, 640
Clutch of Borg & Beck Motor Car, 566*
— and Brakes, Motor-Car Developments in, 566*
— Drive, Fitted, for Electric Motors (Marine Engineering Co. (Stockport), Ltd.), 183*
— Fluid, for Bascule Bridge, Aberdeen (Fluidrive Engineering Co., Ltd.), 482*
— Plates of 35-ton Tanks, Bonded Friction Linings for (T. Broadbent & Sons, Ltd.), 583
Clutterbuck, H. S., the Late, 564
Clyde, River, Projected Tunnel under, 351
Coaches, Railway. See *Carriages*
Coal Blending, Investigations by Fuel Research Board, 146
— Board, National, Apprentice Training Scheme, 627
— Conservation, Productivity Report on, 338. See 735
— Dust in Mines, Risk of Explosions and Pneumoconiosis, 626
— Economy. See also *Fuel Economy; Pulverised Fuel*
— Gas. See *Gas*
— Handling Plant, Uskmouth Power Station, 553*
— Hydraulic Transport of, Feeder for, 296*
— Loaders for National Coal Board, 643*
— Mine. See *Colliery*
— Oil Production from, Fischer-Tropsch Process for, 296, 297
— Position in Europe, Report on, 1952-53, 146, 691
— Production and Utilisation in France, 619
— Properties and Combustion in Boiler with Chain Grate, 61
— Pulverised. See *Pulverised Coal*
— Pulverising Mill (Clarke, Chapman & Co., Ltd.), 354*
— Resources, British, Conservation of, 735. See 338
— Retail Handling Equipment for (Charrold, Ltd.), 605*
— Stocks, Prevention of Spontaneous Combustion in, 727*
— Use in Canada, 820
— Utilisation Research Association, British, Opening of New Laboratory, 20; Investigation on Combustion in Boiler with Chain Grate, 61; Annual Report, 88; Annual Luncheon, 563
— See also PARAGRAPH INDEX
Coalbrook Fischer-Tropsch Plant, South Africa, 297
Coastal Flooding, Committee on, Interim Report, 211
Coating, Electroplated, of Nickel and Chromium, Specification, 829
Cockcroft, Sir J., on Industrial Application of Radioactive Materials, 157
Cohen, G., Sons & Co., Ltd., 100-ton Power Press with Press Brake Attachment, 124*; Dismantling of Beam Engines of Metropolitan Water Board, 501*; Hydraulic Forging Press, 683*
Coiling Plant at Shepcote Lane Works of Firth-Vickers Stainless Steels, Ltd., 332*, 362*
Coke Production in Europe, 146
— Retail Handling Equipment for (Charrold, Ltd.), 605*
Colbeck, E. W., on Design of Creep-Resisting Steels, 505*, 537*. See 455
Cold-Reduction Machine for Seamless Tube Manufacture (Maschinenfabrik Meer A.G.), 162*
— Saw. See *Machine Tools*
Colinese, P. E., on Classifying Metallurgical Literature, 376
Collector, Dust (Dallow, Lambert & Co., Ltd.), 328*
College. See *Education*
Colliery, Chief Inspector of Mines Report, 242
— Lighting. See *Safety Lamps*
— Lynemouth, 1,225-h.p. Automatic Alternating-Current Winding Machine, 774*
— Point of Ayr, Dual-Fuel Engines at, 136
Colliery Project, South Wales, 243
— Machinery Manufacture by Atlas Diesel Co., Sweden, 641*
— Safety in, Research on, 626
— Sandhole, 62-h.p. Electric Locomotive with Overhead Conductor, 279*
— Winding. See *Winding*
— See also *Mines* and *Coal*
Collins, Dr. A. R., on Concrete-Road Construction, 724
Collisions. See *Accidents*
Colorado River, Rock Fill, Weir on, 4*
Colorimeter and Photometer "Physical Eye" for Fluorescent Tubes, 388*
Colour Television Broacasting, Problems of, 389, 441*
— — Development of, 574
Columbia Broadcasting System, Television Broadcasting by, 443
Columbus-Dixon Organisation, Ltd., Power Float for Concrete Floors, 653*
Column, Behaviour of Angle Strut, Report on Investigations, 286
— Collapsing Load of Strut with Elastically-Fixed End, 67*
Combine Harvester, Tractor-Driven (Ransomes, Sims & Jefferies, Ltd.), 85*
— — Tractor Hauled (Marshall, Sons & Co., Ltd.), 810*
Combined Stress. See under *Tests* (*Materials*)
Combustion in Boiler with Chain Grate, Effect of Coal Properties on, 61
— Chamber for Marine Gas Turbine, 492*
— — for 5,400-b.h.p. Marine Gas Turbine, 673*
— Engineering Association, Fuel Efficiency Exhibition and Conference, Manchester, 691
— and Fluid Mechanics Research Laboratory of Brown, Boveri & Co., Ltd., 609*
— Smokeless, of Fuel Oils, 498
— Spontaneous, in Coal Stocks, Prevention of, 727*
— See also *Fuel; Gases*
"Comet" Air Liners of British Overseas Airways Corporation, Service Results, 692
— — Liners, Series "2," 231*
— and Rocket Orbits, Tables for (Review), 613
Commerce. See *Trade.* See also *Industries and Commerce* in PARAGRAPH INDEX
Commercial Motor Cars. See *Motor*
— — Manufacturers, Spurrier Lecture on Road Transport and Commercial-Motor Manufacturer, by H. Spurrier, 821
Commonwealth, Australian, Scientific and Industrial Research Organisation, Annual Report, 679
— Cable Standards, Conference on, London, 190
— Telecommunications, Growth in Traffic, 602
— See also *Australia*
Companies. See PARAGRAPH INDEX
Compactor, Soil, Diesel-Engined Vibratory (A. B. Vibro-Verken), 60*
Comparators, and Linear Measuring Instruments (Sigma Instrument Co., Ltd.), 523
— for Turbine-Blade Root Serrations (British Indicators, Ltd.), 158*
Compound Locomotives. See *Locomotives*
— Stress. See *Tests* (*Materials*)
Compressed-Air Drier (Birlec, Ltd.), 292*
— — Tools. See *Machine Tools*
— — See also *Pneumatic*
Compressor, Air. See *Air Compressor*
Computers and Analysers for Electrical Systems, 147
— Digital, Electronic, Analysis of Rigid Frames by, 230*, 277*
— Electronic, Utilisation in Engineering Practice, 343, 349
Computing, Automatic, in Aircraft Engineering, 344, 351
Computor, Analogue, Description and Application of, 477*
Concrete, Compression and Transverse Testing Machine for (Denison & Son, Ltd.), 294*
— Floors, Power Float for (Columbus-Dixon Organisation, Ltd.), 652*
— — and Roofs, Shuttering for, Supports for (Blaw Knox, Ltd.), 447*
— Prestressed, Effect of Abnormal Temperatures on, 490
— — Exhibits at Building Exhibition, 727
— — Grain Silo at Dublin, 577*
— — for Multi-Storey Office Building (R. Costain, Ltd.), 667
— — Ultimate-Load Design of, 490
— Prestressing, International Federation of, London Congress. See *Prestressing*
— — Jacking Unit for (Cable Covers, Ltd.), 606*
— — Schemes for, Demonstration, 727
— Reinforced—Association, 21st Anniversary Dinner, 755
— — for Lindley High-Speed Test Track, 747
— — Roof for Stockwell Omnibus Garage, 703*
— — Workshop, with Pre-Cast Members, 93*
— Research in Australia, 679
— Road Construction and Soil-Cement, 681, 724
— — Work of Road Research Board on, 177*
— from Roman City of Sabratha, Lybia, 756
— Slab with Reinforced Circular Hole, Stresses in, 808*
— Structures, Use of Electrical Strain Gauges on, 487
— See also PARAGRAPH INDEX
Condenser Tubes, Non-Destructive Testing of, 628
— — Use of Titanium in, 455
Conductivity. See *Electric*
Conduit with Surge Tank, Calculation of Oscillations in (Review), 517
Conference, Aeronautical, Anglo-American. See *Aeronautical Conference, Anglo-American* under *Aeronautics*
— Aslib, Nottingham, Classification System of American Society for Metals and Special Libraries Association, by P. E. Colinese, 376
— on Cathodic Protection, 650
— Chemical Engineering, Programme, 21
— on Commonwealth Cable Standards, London, 190

Conference and Exhibitions, Forthcoming, 151, 279, 407, 567, 695, 823
— — Fuel Efficiency, Manchester, 691
— Glasgow, Brittle Fracture of Steel, 70, 187, 220. See 639
— on Hardness Testing of Steel, Sheffield, Programme, 314
— on Rocket Exploration of Upper Atmosphere, 360
— on Technological Education, 723
— on Welded Structures, Programme, 318
Congella Power Station, Durban, Electrostatic Precipitators at, 776
Congress International Mechanical Engineering, Turin, Programme, 63
— London, of International Federation of Prestressing. See *Prestressing, International Federation of, London Congress*
Conservation of Coal. See *Coal; Fuel; Pulverised Coal*
— of Raw Materials, Information on, 20
Consolidated Pneumatic Tool Co., Ltd., Pneumatic Drill Set, 326*
Consulting Engineers, Association of, Annual Report, 63; 40th Anniversary Luncheon 658; Professional Code, 658
Continental Line Transport Ferry Service, Operations of, 522
Contour Canal Line, 300-ft., Proposed Canal, 741*
Contracts, 15, 47, 79, 111, 143, 175, 207, 239, 271, 303, 335, 399, 480, 669, 702, 728, 800, 832. See PARAGRAPH INDEX
Contractors' Safety Organisation, Work of, 402
Control Cabinet, Remote-, Hydraulic (Automotive Products Co., Ltd.), 394*
— Electronic, for Paper-Making Machine (British Thomson-Houston Co., Ltd.), 595
— Equipment, Automatic for Diesel Engines (Mirrlees, Bickerton & Day, Ltd.), 235*
— — for Diesel-Electric Cargo Ship (British Thomson-Houston Co., Ltd.), 260
— — for 1,000-h.p. Diesel-Electric Locomotive, 141*. See *Addendum*, 212
— — for 2,958-h.p. Electric Locomotive, 66*
— — Side-Register, for Reeling Sheet Material (Ferranti, Ltd.), 669*
— Gear for Bascule Bridge, Aberdeen, 482*
— Panel for 151-h.p. Elec ıre Motor (W. H. Allen, Sons & Co., Ltd·), 258*
— — for 8,000-s.h.p. Marine Steam Turbine (Metropolitan-Vickers Electrical Co., Ltd.), 262*
— Pneumo-Hydraulic, for Blast-Furnace Blowers (General Electric Co., Ltd.), 761*
Controllers, Electric Motor. See *Motors, Electric*
Converter Rotary (Electric Construction Co., Ltd.), 276*. See 216*
Conveyancer Fork Trucks, Ltd., 40-h.p. Diesel-Engined Furnace-Charging Machine, 412*
Conveyor Bridge for Dam Construction, Use of Bailey-Bridge Units for, 601*
— Driving Drum (Edgar Allen & Co., Ltd.), 59*. See *Erratum*, 240
— for Drying Oven for Printed Steel Sheets, 779*
— for Handling Materials, 369
— at Ice-Cream Factory of T. Wall & Sons, Ltd. (W. & C. Pantin, Ltd.), 502*
— Kit, Overhead, "P.C.P." (G. W. King, Ltd.), 800*
— for Prestressed-Concrete Grain Silo at Dublin, 580*
— Selective-Screen (West's Gas Improvement Co., Ltd.), 828*
Conway, H. G., on New British Standard System of Limits and Fits, 817
Coode & Partners, Singapore Power Station, 283. See *Erratum* 584
Cook, Dr. M., on New Metal Titanium, 427. See 402, 438
Cooke, J. O., on Availability and Distribution of Smokeless Fuels, 498
Cooling by Water of Open-Hearth Furnaces, 772
Coombs, J. H., & Partners, Fluorescent Lighting for Stockwell Garage, 703*
Cooper Roller Bearing Co., Ltd., Split-Roller Bearing, 355*
Copenhagen Plan for Broadcasting Frequencies, 543, 573
Copper Alloys. See *Bronze;* and *Alloys* under *Metallurgy*
— in Aluminium and Aluminium Alloys, Analysis of, Specification, 767
— Diffusion of Zinc and Aluminium in, 470
— Growth of Sulphide Films on, 470
— High-Conductivity, Memorandum on Values for Properties of, 111
— Ingots, Continuous Casting Machine for (Sheppard & Sons, Ltd.), 809*
— Oxidation of, in Temperature Range 200 deg. to 800 deg. C., 470
— Plate, Specification, 606
— Tubes, Specification, 606
— See also *Metallurgy*
Cornish Engine in Cornwall, 339*, 371
— — Preservation Society, Work of, 148, 339*, 341*, 371
— Pumping Engines and Rotative Beam Engines (Review), 581
Cornwall, Camborne, East Pool Mine, Pithead-Gear Collapse at, 402
— Cornish Engine in, 339*, 371. See 148, 341*
Coronation Ceremonies, Sound and Television Broadcasts of, Technical Arrangements for, 775
— Reception by London County Council, 51
"Corronel B" Wrought Nickel-Molybdenum Alloy, 248
Corrosion Control and Cathodic Protection, 650
— Investigations at Chemical Research Laboratory, 428, 434
— of Light-Gauge Steel in Buildings, Protection Against, Specification, 606
Cosmic-Ray Observations at Herstmonceux Observatory, 126
Cosmical Research and Astronomy, 315
Cossor Radar, Ltd., Marine Radar Display Console, 323*
Costain, R., Ltd., Prestressed-Concrete Multi-Storey Building, 667
Cottee, J. W., the Late, 238
Cotter Slots and Quick-Release Tapers, Specification, 320
Counter, Scintillation and Luminescence (Review), 644
Coupling, Oil-Pipe (Tufnol, Ltd.), 260*
— See also *Clutch*
Couture, J., on French Power Resources, 619
Coventry Climax 190-h.p. V8 Petrol Engine, 589*
Coventry Gauge & Tool Co., Ltd., Broach-Sharpening Machine, 428*
Coventry Victor Motor Co., Ltd., Marine Auxiliary Set, 327*; 16/30 h.p. Horizontally Opposed-Piston Petrol Engine, 328*
Cowan, H. J., on "Concrete" from Roman Ruin, 756*
Cowlard, S. R., Ltd., Battery-Driven Floor-Cleaning Machine, 831*
Crack Detection by Radioactive Materials, 157
— Detector, Permanent-Magnet (Metropolitan-Vickers Electrical Co., Ltd.), 5*
Crane, Mobile, 75-b.h.p., Diesel-Electric (Walker Brothers (Wigan), Ltd.), 395*
— Tower, Lorry-Mounted (Steels Engineering Products, Ltd.), 813*
— — Self-Erecting, for Building (Abelson & Co. (Engineers), Ltd.), 648*
— Tractor-Mounted (H. Ferguson, Ltd.), 87*
Crankshaft, Built-Up, Shrink-Fit Calculations for, 228*
Craven Brothers (Manchester), Ltd., Large Universal Boring Mill, 449*; Precision Screw-Thread Corrector Lathe, 524*
Craven's Railway Carriage & Wagon Co., Ltd., Air-Conditioned Railway Carriage, 59*
Crawley Development Corporation, Road Construction for, 724
— Pease Pottage, Automatic Radar Meteorological Station, 299*
Creep Characteristics of Xylonite Structures, 665*
— in High-Temperature Steam Pipes, 549. See LETTER, 723
— of Steel and Alloys, Investigations on, 455, 505*, 537*
— Tests. See under *Tests (Materials)*
Crennell, J. T., on Cathodic Protection in Royal Navy, 650
Crewe Pupils' and Premium Apprentices' Annual Dinner, 403
Crofts (Engineers), Ltd., Gearing for Bascule Bridge, Aberdeen, 482*
Crompton Parkinson, Ltd., Mobile Van for High-Voltage Cable Tests, 62*; Single-Deck High-Speed Tramcars, 124*. See 254*. See *Erratum*, 199; Standard Squirrel-Cage Electric Motor, 258*; Exhibition of Historic Electrical Machines and Apparatus, 466
Crompton, Col. R. E. B., Work of, 466
Crone & Taylor, Ltd., Unloading and Stacking Machine, 288*
Crop Loader, Elevating (Bamfords, Ltd.), 44*
Crossing, Railway, Cast-Steel (Edgar Allen & Co., Ltd.), 59*
Crossley Brothers, Ltd., 250-b.h.p. "Packaged" Power Unit, 289*; 670-b.h.p. Marine Diesel Engine, 289*
Crossley, F. P. I., the Late, 366.
Crowsley Park, Reading, Receivers for Broadcast Monitoring Service, 137*
Crude-Oil Engines. See *Engines, Oil*
Crushers, Jaw, Performance of, 456*, 485*
Crushing Plant, Stone, Experimental, at Underwood Quarry, 281*
— Rolls for Ironstone (Hadfields, Ltd.), 59*
Crystalline Structure of Metals. See *Metallography; Microphotographs*
Crystallography, X-Ray Films for, Dimensions of, Specification, 606
Cubitt, W., & Co., Cold Store at T. Wall & Sons Ice-Cream Factory, 502*
Cude, A. L., on Length of Oil and Gas Flames, 725. See 744.
Cultivator and Seeder, Combined (H. Ferguson, Ltd.), 86*
Cummings versus R. Thomas & Baldwins, Ltd., Legal Decision in, 99. See LETTER, 179
Cunard Steam Ship Co., Ltd., M.S. "Pavia," 92*
Cupola, Foundry, Hot-Metal Receivers for, 27*
Cutlery, Pressing Shop for (Richards Bros. & Sons, Ltd.), 91*
"Cutogen-6" Powder-Cutting Blowpipe, 258*
Cutting, Powder, Blowpipe Equipment (British Oxygen Co., Ltd.), 258*
"Cutty Sark," Sailing Ship, Report on State of, 337
Cycle and Motor Cycle Show, Earl's Court, 659
— Motor. See *Motor Cycle*

D.

DALE ELECTRIC (YORKSHIRE), LTD., 1,250-Watt Diesel-Driven Electric Generator, 213*
Dallow, Lambert & Co., Ltd., Dust Collector, 328*
Dam, Arch, Castelo do Bode Hydro-Electric Scheme, 660*
— Burvagn, on Julia River, Zürich, 129*
— Cluanie, Slag Cement Plant at, 557*. See *Erratum*, 640
— Construction, Conveyor Bridge for, Use of Bailey-Bridge Units for, 601*
— Fort Sumner, New Mexico, Degradation of, 4*
— Marmorera, on Julia River, Zürich, 132*
Darley, Sir B. D., the Late, 244
Dartford-Purfleet Tunnel under River Thames, 361
Dartmouth, Commemoration of Anniversary of T. Newcomen, 244
Dassault "Mystère" Fighting Aircraft, 74*
Davey, Paxman & Co., Ltd., 500-h.p. Diesel Engine for Diesel-Electric Locomotive, 139*. See *Addendum*, 212; 250-b.h.p. Six-Cylinder Diesel Engine, 262*; 800-h.p. Twelve-Cylinder Diesel Engine, 324*
David, E. J., on Availability and Distribution of Smokeless Fuels, 498
Davies, D. M., on Machine for Measuring Load and Deformation of Rubber, 196*
Davies, Prof. S. J., on Performance of Two-Stroke Oil Engine for Automobiles, 385*, 419*. See *Erratum*, 519
Davy & United Engineering Co., Ltd., Rolling Mills, 59*; 6,000-ton Wheel-Forging Hydraulic Press, 59*; Rolling Mills at Shepcote Lane Works, Sheffield, 332*, 362*; Large Universal Boring Machine, 449*
Dawes, W., on Contractors' Safety Organisation, 402
Dawson, W., the Late, 46
Day, G. F., on Bending of Simply-Supported Rectangular Plates, 308*, 358*
Dayton, Ohio, Aircraft Work of W. and O. Wright, 737*, 753
D. C. Endert, Jr., Experiments with Launch, 403, 425
de Boer, J. B., on Criteria in Quality of Street Lighting, 370
de Bruyne, Dr. N. A., on Structural Adhesives for Metal Aircraft, 424
Decks of Plate-Girder Bridges, Loads on, 645*
Dee and Clwyd River Board, Bala Lake Improvement Scheme, 412
de Graaf, Prof. J. E., on Notched Slow-Bend Test as Brittle-Fracture Test, 772
de Havilland Aircraft, Ltd., "Comet" Series 2 Air Liner, 330*; "Heron" Series 2 Air Liner, 331*
de Havilland Aircraft of Canada, Ltd., "Beaver" Series 2 Light Transport Aircraft, 406*
de Havilland Engine Co., Ltd., "Gyron" Jet Aero Engine, 179; Rocket Motor "Super Sprite," 287, 406
de Havilland Propellers, Ltd., Cold-Air Unit for Aircraft Cabins, 255*
Denison & Son, Ltd., Compression and Transverse Testing Machine for Concrete, 294*
Denny, W., and Brothers, Ltd., Stabilisers of S.S. "Andes," 491
Denton, C. R., the Late, 110
Deposits in Internal-Combustion Engines and Gas Turbines, 42*
Derby, Wind Tunnel for Railway Research, 564
De-Scaling Plant at Shepcote Lane Works of Firth-Vickers Stainless Steels, Ltd., 332*, 362*
"de Schelde" Shipyard, Flushing, Use of Marking-Off System at, 486, 571*
Design aid for Shrink-Fit Calculations, 228*
— Engineering, Use of Electronic Computers in, 343, 349
— and Inventions (Crown Use), Bill, 723
— for Production, Report of British Productivity Council, 530
Desoutter Brothers, Ltd., ¼-in. Pneumatic Drill, 294*; Pneumatic Corner Drill, 294*; Nut Runner for Use in Corners, 294*
Destroyers. See *Warships*
"Desynn" Rudder-Angle Indicator, 325*
Detector, Crack, Permanent-Magnet (Metropolitan-Vickers Electrical Co., Ltd.), 5*
— Direction, Airstream (Ferranti, Ltd.), 480*
— Flaw, Magnetic, Minchom-Sempun (R. P. R. Patents, Ltd.), 736*
— Ultrasonic, for Flaws in Rails (Branson Instruments Inc.), 11*. See *Addendum*, 412
Diamond Powder, Classification of, Specification, 143
— Technology, Production Methods for Diamond and Gem Stones (Review), 676
— Truing Tools, Dimensions of, Specification, 254
Diatomite Industry in Isle of Skye, 444
Die-Casting Foundry of Non-Ferrous Die Casting Co., Ltd., Reorganisation of, 185*
— — "Niforge" (Carron-Parlanti, Ltd.), 762
— — Standardisation of Alloys for, 222
Diesel Engine Users Association, Noise: Practical Aspects of, by J. E. Holton, 692
— — See *Engines, Oil, Diesel; Marine Propulsion*
Diffusion and Kirkendall Effect, 470
Digging Machines. See *Excavator*
Dimbleby, T. E., on Live Load Tests of Wire Ropes and Fittings, 734*
Dimensional Analysis and Physical Similarity (Review), 516
Direction Detector, Airstream (Ferranti, Ltd.), 480*
Directories. See LITERATURE INDEX
Disc Harrow, Heavy-Duty, Reversible (H. Ferguson, Ltd.), 23*
— Terracer, Tractor-Mounted (H. Ferguson, Ltd.), 23*
Disintegrator, Laboratory and Industrial (G. Scott & Son (London), Ltd.), 832*
Disputes, Trade. See *Labour*
Distillation Tray for Fractionating Columns (W. J. Fraser & Co., Ltd.), 325*
District Heating and British Power Stations, 827
— — Problems and Application of, 422, 473*, 507*
Divers' Intercommunication Equipment, 555
Dixon, J., & Sons, Ltd., Silversmith Work, 91*
"Djinn" Helicopter, 75*
Dobbie McInnes, Ltd., High-Speed Plotting Table, 391*; High-Speed Recorder, 391*; Poise Meter for Oil, 392
Dock, 500-ton Floating, on Lake Nyasa, Erection of, 200*
— and Inland Waterways Executive, Hydraulic Research Laboratory for, 120, 138*. See LETTER, 212
— Labour Board, National, Annual Report, 114
— London, History and Features of, 637
Dock, Victoria, Aberdeen, Bascule Bridge of Aluminium-Alloy, 481*
Documentation, Aeronautical, Proposals by North Atlantic Treaty Organisation, 490
Domestic Applications of Solar Energy, 372, 409*
— Fires and Atmospheric Pollution, 747
— — Smoke from, 497
— Heating, Atmospheric Pollution from, 145
— — Investigations on, 422
— Paraffin Appliances, Specification, 839
Donkin, S. B., Pimlico District Heating Scheme, 422, 507*
Donking, T. H., the Late, 590
Dorman, Long & Co., Ltd., Cleveland Works of, 94; Opening of Lackenby Steelworks, 453; Harold Wright Lecture on Steel-making Related to Blast-Furnace Practice, by J. Mitchell, 701
Dorman, W. H., & Co., Ltd., 52-h.p. Three-Cylinder Diesel Engine, 259*
Double Reduction Gears, Marine. See *Marine Propulsion*
Doulton & Co., Ltd., Pipeline Filter Unit, 327*
Dover Harbour Board, Motor-Car Ferry Terminal, 55*
Dovercourt, Yeast Factory, Equipment at, 76*
Drafting Machine (Mavitta Drafting Machines, Ltd.), 30*
— — Perspective (F. Kuhlmann K.G.), 202*
— Practice, Simplified (Review), 625. See LETTER, 692
Dragline Bucket, 12-cub. yd. (Hadfields, Ltd.), 59*
Draught Gauge, Differential (G. Kent, Ltd.), 384*
Draughting Machine (Mavitta Drafting Machines, Ltd.), 30*
— — Perspective (F. Kuhlmann K.G.), 202*
— Practice, Simplified (Review), 625. See LETTER, 692
Draw Benches for Seamless Tube Manufacture, 161*, 225*
Drawings, Engineering, Dimensioning of (Review), 676
— Office of C. A. Parsons & Co., Ltd., 713*
— — Practice, Economy in, 625. See LETTER, 692
Dressings, Surface, for Protecting Soil Formations, 793*
Drier, Compressed-Air (Birlec, Ltd.), 292*
Drill Chuck. See *Machine Tools*
— and Drilling Machines. See *Machine Tools*
— Seed-Spacing, Agricultural (Stanhay (Ashford), Ltd.), 105*
Drive, Fitted Clutch, for Electric Motors (Marine Engineering Co. (Stockport), Ltd.), 183*
Driving Drum Conveyor, 59*. See *Erratum*, 240
Drop Forging, Titanium-Alloy, for Aircraft Propeller Blades, 373*
Drums, Boiler, Forged (T. Firth & J. Brown, Ltd.), 90*
— — Hollow-Forged (English Steel Corporation, Ltd.), 702*
— Electric Surface Heater for (Isopad, Ltd.), 294*
Dry Dock. See *Dock*
Drying Plant at Prestressed-Concrete Grain Silo at Dublin, 580*
Drysdale & Co., Ltd., Axial-Flow Pump for Transformer Oil, 355*
Dublin North City Milling Co., Prestressed-Concrete Grain Silo at Dublin, 577*
Ductile Steels, Ltd., Planetary Hot-Rolling Mill for Steel Strip, 545*
Dumper, ½-cub. yd. (Aveling-Barford, Ltd.), 652*
Dunlop Rubber Co., Ltd., Electro-Pneumatic Fuel Transfer System, 151*; Motor Lorry for Bulk Transport of Carbon Black, 429*
Durban, Congella Power Station, Electrostatic Precipitators at, 776
Durham University, King's College, Newcastle-upon-Tyne, Appeal for, 306, 558
Dust from Cement Works, 266
— Coal, Explosions of. See *Coal Dust*
— — See also *Pulverised Coal*
— Collector (Dallow, Lambert & Co., Ltd.), 328*
— Extraction Plant at Sheffield Refuse-Disposal Plant (Newton Collins, Ltd.), 634
Dyball, R. S., the Late, 718
"Dyna" Panhard Motor Car, 535*
Dynamos. See *Generators, Electric; Turbo-Generators*

E.

EAGAN, R. E., LTD., Pre-Cast Reinforced-Concrete Portal Frames for Workshop, 93*
Earl's Court. See *Exhibition*
Earlsfield Diesel-Engine Factory, Peterborough of F. Perkins, Ltd., 12*
Earnings of Industry: Truth About Prices and Profits (Review), 82
East Asiatic Co., Ltd., M.S. "Samoa," 217*
— Kilbride Aero-Engine Factory, 717*
— — Engineering Laboratory, Work of, 209
— Pool Mine, Camborne, Cornwall, Pithead-Gear Collapse at, 402
Easten, S., Ltd., Design and Research Building of C. A. Parsons & Co., Ltd., 713*
Eaton, Dr. F. J., on Smoke from Domestic Fires and Industrial Furnaces, 497
Eborall, R., on Stretcher-Strain Markings in Aluminium-Magnesium Alloys, 439
Economics, Industrial. See *Labour*
Economy, Fuel. See *Fuel Economy*
"Ecrevisse" Pulse Jet, 73*
Edgar Allen & Co., Ltd., Driving Drum Conveyor, 59*. See *Erratum*, 240; Cast-Steel Railway Crossing, 59*; Permanent Magnet, 91*
Edgecombe, J. E., the Late, 212
Edinburgh, Royal Scottish Museum, Annual Report, 83

Education:
Chemical Engineers, Training of, 401
City and Guilds of London Institute, Insignia Award in Technology, 819
Coal Board, National, Apprentice Training Scheme, 627
Durham University, King's College, Newcastle-upon-Tyne, Appeal for, 306, 558
Education, Ministry of, Report on Education in 1952, 19; Courses for Industrial Scientists and Technologists, 307
Electrical Engineering, Film Strips for Teaching, 83
Faraday House Old Students Association, Annual Diner, 595
Glasgow University, Investigations of Combined Magnetisation of Magnetic Materials, 517, 697*, 731
Graduate Engineers, and Training for Management, 401
— Teachers of Mathematics and Science, Report, 754
Imperial College of Science and Technology, London, Lectures on Analysers and Computers for Electrical Systems, 147; Researches on Solar Energy, 409*
King's College, Newcastle-upon-Tyne, Appeal for, 306, 558
— George VI Memorial Fellowships, 435
Liverpool University, Webb's Approximation of Sec θ by Dr. T. A. S. Jackson, L. Rosenhead and T. Murphy, 298
Manchester University, Stress Analysis by Electronic Digital Computer, 230*, 277*; Electronic Computing Machine of, 343, 349
Massachusetts Institute of Technology, Experiments in Nuclear Reaction, 275
Mechanical Engineers, Training of, 531, 533
National Coal Board, Apprentice Training Scheme, 627
Nottingham University, Stuart Lecture on Engine Research on Fuels and Lubricants, by Dr. C. G. Williams, 37*; Machines for Measuring Load and Deformation of Rubber, 196*; Investigation on Bending of Simply-Supported Rectangular Plates, 308*, 358*
Old Centralians Association, Annual Dinner, 692
Oxford University, Conference on Young Worker: Education for Human Relations, 660
Peterborough Technical College, Opening of, 504
Queen Mary College, London, Opening of Nuclear-Particle Laboratory, 91; Investigation of Pressure Rise in Spark-Ignition Engines, 135*
Railway Civil Engineering as a Career, Booklet on, 435
Royal Air Force Technical College, Henlow, Courses at, 435
— Military College of Science, Determination of Stresses in Curved Beam, 103*
— Society and Nuffield Foundation, Commonwealth Bursaries, 147
Teaching of Production Management in United States, 689. See *Addenda*, 813. See LETTER, 756
Technical College Education, Report on, 307
— Education and Industry, Recruitment of Engineers, 467
Technological Education, Conference on, 723
Training of Electrical Testers by British Thomson-Houston Co., Ltd., 470
See also PARAGRAPH INDEX
Edwards, F. J., Ltd., 40-ton Geared Inclinable Press, 256*; Saw-Sharpening and Gulleting Machine, 284*; Chain Mortiser Woodworking Machinery, 284*; Tin-Box Making Machinery, 460*
Efficiency of Boiler Plants. See *Boiler*
— of Engines. See *Engines; Trials*
Ejector Seat, Lightweight, for Aircraft, 585

Electric:
Accumulator Vehicles. See *Motor Vehicle; Motor Trucks*
Actuator, Linear, 24-Volt, Test Rig for (Tiltman Langley Laboratories, Ltd.), 797*
Alternator. See *Generator* and *Turbo*
Anodes for Cathodic Protection, 650
Appliances, Domestic, Testing Laboratory for, 489*
Arc Furnaces. See *Furnace, Electric*
— Suppression Equipment, Electronic, for Mercury-Arc Rectifiers, 100*
— Welding. See *Welding*
Battery Vehicles. See *Motor Vehicle; Motor Truck*
British Electrical and Allied Manufacturers Association, Annual Dinner, 659
British Electrical Development Association, Testing Laboratory for Domestic Appliances, 489*
British Electricity Authority, Trials of Submarine Cables Between England and France, 31, 170*; Power Stations on Tyne and Tees-side, 94; 275-kV Transmission System, 122*; Annual Report, 466; Uskmouth Power Station, 552*; Fireless Steam Locomotive, 608*; Memorandum on Parallel Operation of Public and Private Electricity Systems, 626; The First Five Years of, 663; Unified Boiler Control at Trafford Power Station, 676*; 132-kV Three-Core Cable Installation, 695; Hollow-Forged Boiler Drums for, 702*; Coal Storage at Hackney Power Station, 727*; Review of Work of, 827

Electric—*continued.*
Cable, Fire-Resisting (Pirelli-General Cable Works, Ltd.), 182
— High-Voltage, Mobile Van for Tests of (Crompton Parkinson, Ltd.), 62*
— Installation, 132-kV Three-Core, 695
— Insulated, Specifications, 320
— Power, Their Design and Installation (Review), 4
— Standards, Commonwealth, Conference on, London, 190
— Submarine, and Commonwealth Tele-Communications, 602
— — For Power, Between England and France, Trials of, 31, 170*
— — Telephone, Great Britain to America, 755
— Works of W. T. Henley's Telegraph Co., Ltd., 94
Cathode Assembly Machine for Fluorescent-Tube Manufacture, 389*
Circuits and Mechanical Oscillating Systems, Analogy Between, 763*
Conductor Stringing, Rocket Aids for, 114
— for 275-kV Transmission System, 122*
Converter, Rotary (Electric Construction Co., Ltd.), 276.* See 216*
Cord, Flexible, Insulated, Specifications, 320
Cranes. See *Cranes*
Dynamo. See *Generator; Turbo-Generator*
Electrical Engineering, Introductory: Circuits and Machines (Review), 740
— Equipment Export Trade, 594
— Installations, High-Voltage, Insulation of, 767
— Machines and Apparatus, Historical, Exhibition by Crompton Parkinson, Ltd., 466
— Systems, Analysers and Computers for, 147
Electro-Magnetic Machines (Review), 771
Electronic Arc Suppression in Traction Rectifiers, 773
— Equipment and Apparatus Exhibition, Manchester, 183
— — Automatic Radar Meteorological Station, 300*
— Flame-Failure Devices, Operating Range of, 171
Electronics Exhibition, Manchester, 19, 183
— Institution of, *North Western Branch:* Electronics Equipment Apparatus Exhibition, 19, 183
— of Switching of Telephone Calls, 389, 413*, 445*
Electroplating. See *Electro*
French Electricity Authority, Trials of Submarine Cables Between England and France, 31, 170*
Frequency Allocation for Television, Report, 81
Frequencies for Broacasting and Television, 543, 573
Furnaces. See *Furnaces*
Fuse-Links, Cartridge, for Use in Plugs, Specification, 207
Generating Stations. See *Power Stations*
Generator. See *Generator* and *Turbo*
High-Voltage Equipment, Photo-Electric, Protection of, 648
Hydro-Electric Power Plants. See *Power Plants*
Insulation of High-Voltage Electrical Installations, 767
— Tester, "Megger" (Evershed & Vignoles, Ltd.), 290
Lamp, Mercury-Vapour Discharge, for Photo-Printing, 547*
— 150-Watt, Mining, Pneumatic (Atlas Diesel Co.), 643*
— for Public Lighting, 370
Lighting System of Design and Research Building of C. A. Parsons & Co., Ltd., 714*
Lightning, Atmospheric Noise from, Investigations on, 241
Locomotives. See *Locomotives, Electric*
Machines. See *Generators; Motors; Turbo*
Mains. See *Cables* (above)
Mercury-Arc Rectifiers, Electronic Arc-Suppression Equipment for, 100*
— — Rectifier, Grid-Controlled (Nevelin Electric Co., Ltd.), 321
Meter, Conductivity "Sigmatest" (Solus-Schall, Ltd.), 293*
— Electricity, Legislation and Costs of, 786
— — Prepayment, Specification, 367
Motors. See *Motors, Electric*
Networks, A.C., and Power Transmission Lines (Review), 99
Oil Switch. See *Switchgear*
Oscillating Systems, Electrical Circuits and Mechanical, Analogy Between, 763*
Photo-Electric Protection of High-Voltage Equipment, W. T. Henley's Telegraph Works Co., Ltd., 648
— — Protective System, Long-Range (General Electric Co., Ltd.), 637
Power. See *Power*
— Stations. See *Power Stations*
Railways. See *Railways*
Rays. See *X-Rays*
Rectifier Equipments, 1,000-kW, 660-Volt, Surrey Docks Substation, 437*
— Grid Controlled, 130-kW, for Unified Boiler Control System, 676*
— Mercury-Arc, Electronic Arc-Suppression Equipment for, 100*
— — Arc Grid-Controlled (Nevelin Electric Co., Ltd.), 321
— Traction, Electronic Arc Suppression in (General Electric Co., Ltd.), 773
Relay for Control of Reactive Power (Chamberlain & Hookham, Ltd.), 671*
— Pneumatic Time-Delay (Electro Methods, Ltd.), 218*
— Protective and Auxiliary (English Electric Co., Ltd.), 768*

Electric—*continued.*
Resistance Welding. See *Welding*
Rolling Mills, Electric Driving of. See *Rolling Mills*
Röntgen Rays. See *X-Rays*
Ship Propulsion. See *Marine Propulsion*
Starters, Motor. See *Motors, Electric*
Steel Manufacture. See *Metallurgy;* and *Furnace, Electric*
Street Railways. See *Tramways*
Substation. See *Substation*
Switchgear. See *Switchgear Motors, Electric*
Telegraphy. See *Telegraphy*
Telephony. See *Telephony*
Testers, Electrical, Training by British Thomson-Houston Co., Ltd., 470
Traction. See *Locomotives, Electric; Railways; Tramways*
Tramways See *Tramways*
Transformers. See *Transformers*
Tubes, Fluorescent, Developments in (General Electric Co., Ltd.), 388*
Turbo-Generators. See *Turbo-Generators*
Welding. See *Welding*
Winding Gear. See *Winding*
Wireless Telegraphy. See *Telegraphy; Radar; Radio; Television*
Wireless Telephony. See *Telephony; Radar; Radio; Television*
See also PARAGRAPH INDEX
Electric Construction Co., Ltd., Rotary Converter, 276*. See 216*; Diesel-Driven Electric Generator 295*
Electric Furnace Co., Ltd., 10-cwt. Electric Steel-Melting Furnace, 685*

Electrical Engineers, Institution of:
Summer Meeting, Tyne and Tees-Side, Visits and Excursions, 51, 93
Awards of Premiums, 70
Election of Officers and Council, 73
Presidential Address by H. Bishop on British Broadcasting Service, 543, 573. See 499
Insulation of High-Voltage Electrical Installations, by J. S. Cliff, 767
Technical Arrangements for Sound and Television Broadcasts of Coronation Ceremonies, by W. S. Procter, M. J. L. Pulling and F. Williams, 775
Measurements Section:
Influence of Legislation on Costs of Metering, by S. Howarth, 786
Radio Section:
Commonwealth Telecommunications, by J. A. Smale, 602
Loud-Speaker Systems: Recent Trends in Design, by Major A. E. Falkus, 760
Supply Section:
Summer Meeting in South Wales, 467
Theory and Operation of Electrostatic Precipitators for Use on Pulverised-Fuel Boilers, by N. Troost, 776
Utilisation Section:
Men and Materials, by B. L. Metcalf, 562
Wear of Carbon Brushes at High Altitudes, by R. F. Sims, 726
Electrical Engineers, Supervising, Association of. See *Supervising Electrical Engineers, Association of*
— Engineering, Introductory: Circuits and Machines (Review), 740
— Manufacturers, 1875-1900 (Review), 484
Electro Mechanical Manufacturing Co., Ltd., Fused Switchgear for Oilfield Work, 291*
Electro Methods, Ltd., Pneumatic Time-Delay Relay, 218*
Electrolytic Corrosion. See *Corrosion*
Electronic Arc Suppression in Traction Rectifiers, 773
— Equipment and Apparatus Exhibition, Manchester, 19, 183
— — Automatic Radar Meteorological Station, 300*
— Flame-Failure Devices, Operating Range of, 171
Electronics Exhibition, Manchester, 19, 183
— Institution of, *North Western Branch:* Electronics Equipment and Apparatus Exhibition, 19, 183
— of Switching of Telephone Calls, 389, 413*, 445*
Electroplate, Nickel and Chromium, Specification, 829
Electroplating, Nickel Anodes and Nickel Salts for, Specification, 829
— Thickness Measurement by Radioactive Materials, 157
Electrostatic Precipitators, Congella Power Station, 776
Electrotechnical Commission, International, Yugoslav Meeting, 211
Elevator, Portable (A. B. Blanch & Co., Ltd.), 85*
— — Petrol-Driven, for Building Materials (M. B. Wild & Co., Ltd.), 189
— for Prestressed-concrete Grain Silo at Dublin, 580*
Elliot, D. G., on Aluminium as Structural Material, 179
Ellison, G., Ltd., Totally-Enclosed Rotor Starters for Electric Motors, 328*; Two-Way Hydraulic Valve, 328*
Embankment for Blithfield Reservoir, 598*
— Fenny Compton, Tool for Deep-Level Grouting, 779*
— for Lindley High-Speed Test Track, 747
Emery Wheels. See *Grinding* under *Machine Tools*
Employees. See *Labour*
Employment. See *Labour*
Endurance Tests. See *Fatigue* under *Tests (Materials)*
Enfield Cables, Ltd., Exhibition of Wind-Power Equipment, 33*
Engel, F. V. A., on Problems of Fluid-Flow Measuring Devices, 6*, 35*. See LETTER, 244*
Engines, Aero. See *Aeronautics*

Engines, Beam, Rotative, and Cornish Pumping (Review), 581
— Diesel. See *Engines, Oil, Diesel; Marine Propulsion; Motorships*
— Fire. See *Fire*
— Gas, Pressure-Charged (National Gas & Oil Engine Co., Ltd.), 748*
— — 2¾-b.h.p. Single-Cylinder, Tangyes, Ltd., 215*
— — See also PARAGRAPH INDEX
— Heat, Thermodynamics Applied to (Review), 771
— Internal-Combustion, Analysis of Noise from, 692
— — Combustion, Dual-Fuel (English Electric Co., Ltd.), 136
— — Combustion, Exhaust Turbo-Extractor for (Wade Engineering, Ltd.), 358*
— — Combustion, Research Association, British, Luncheon, 83; Work of, 607*
— — Combustion, Spark-Ignition, Investigation of Pressure Rise in, 135*
— — Combustion. See also *Turbines, Gas*
— Locomotive. See *Locomotive*
— Motor Car. See *Engines, Petrol*
— Oil, Diesel, 33-h.p. (Bolinder's Co., Ltd.), 260*
— — Diesel, Automatic-Control Equipment for (Mirrlees, Bickerton & Day, Ltd.), 235*
— — Diesel, 1,100-b.h.p. Dual-Fuel (English Electric Co., Ltd.), 354*
— — Diesel, 1,850-b.h.p. Eight-Cylinder (Harland & Wolff, Ltd.), 394*
— — Diesel, 306-b.h.p. Eight-Cylinder (National Gas & Oil Engine Co., Ltd.), 328*
— — Diesel, 80-b.h.p. Eight-Cylinder (Petters, Ltd.), 813*
— — Diesel, 110-b.h.p. Five-Cylinder (J. & H. McLaren, Ltd.), 323*
— — Diesel, 250-b.h.p. Four-Cylinder (Crossley Brothers, Ltd.), 289*
— — Diesel, Fuel and Lubricant Research with, 37*
— — Diesel, Marine, 90-b.h.p. (J. I. Thornycroft & Co., Ltd.), 301*
— — Diesel, Marine, 440-s.h.p. (H. Widdup & Co., Ltd.), 321*
— — Diesel, Marine, 32·5-b.h.p. Four-Cylinder (D. Brown Tractors, Ltd.), 327*
— — Diesel, Marine, Four-Cylinder Doxford, M.S. "Pavia," 92*
— — Diesel, Marine, 30-h.p. Four-Cylinder (J. I. Thornycroft & Co., Ltd.), 261*
— — Diesel, Marine, 1,600-b.h.p. Model of (National Gas & Oil Engine Co., Ltd.), 357*
— — Diesel, Marine, 8,700-b.h.p. Seven-Cylinder, Burmeister & Wain, 217*
— — Diesel, Marine, 670-b.h.p. Six-Cylinder (Crossley Brothers, Ltd.), 289*
— — Diesel, Marine, 3,000-s.h.p. Ten-Cylinder (Götaverken A/B), 251*
— — Diesel, Motor-Car, Developments in, 588*
— — Diesel, Paxman, 12-Cylinder, 625-h.p. for Locomotive, 651
— — Diesel, 11·3-litre "Power Pack" (A.E.C., Ltd.), 353*
— — Diesel, 190-b.h.p. "Power Pack" (Rolls-Royce Ltd.), 265*
— — Diesel, 60-h.p. "Power Pack" (Sentinel (Shrewsbury), Ltd.), 392*
— — Diesel, Production by F. Perkins, Ltd., 12*, 787
— — Diesel, 35-b.h.p. Single-Cylinder M.A.N., 216*
— — Diesel, 2¼-h.p. Single-Cylinder Petter, 213*
— — Diesel, 2·5-h.p. Single-Cylinder (Petters, Ltd.), 87*
— — Diesel, 8-h.p. Single-Cylinder (Russell, Newbery & Co., Ltd.), 95*
— — Diesel, 150-h.p. Six-Cylinder (Bolinder's Co., Ltd.), 260
— — Diesel, 600-b.h.p. Six-Cylinder (British Polar Engines, Ltd.), 391*
— — Diesel, 250-b.h.p. Six-Cylinder (Davey, Paxman & Co., Ltd.), 262*
— — Diesel, 588-kVA Six-Cylinder, for Alternator Set (W. H. Allen, Sons & Co., Ltd.), 257*
— — Diesel, 52-h.p. Three-Cylinder (W. H. Dorman & Co., Ltd.), 259*
— — Diesel, 800-h.p. Twelve-Cylinder (Davey Paxman & Co., Ltd.), 324*
— — Diesel, 500 h.p. Twelve-Cylinder Davey Paxman, for Diesel-Electric Locomotive, 139.* See *Addendum*, 212
— — Diesel, 1,500-h.p. Twelve-Cylinder, for Diesel-Electric Locomotive, 172*
— — Diesel, 1,500-h.p. Twelve-Cylinder (English Electric Co., Ltd.), 354*
— — Diesel, 1,125-b.h.p. Twelve-Cylinder (Ruston & Hornsby, Ltd.), 262*
— — Diesel, 14/20-h.p. Twin-Cylinder (Armstrong Siddeley Motors, Ltd.), 328*
— — Diesel, 16-h.p. Two-Cylinder (Bamfords, Ltd.), 44*
— — Diesel. See also *Motorships; Marine Propulsion; Diesel Engine Users Association*
— — 3·56-b.h.p., Hornsby-Akroyd (R. Hornsby & Sons, Ltd.), 215*
— — Marine, 60-h.p. Six-Cylinder (Petters, Ltd.), 357*
— — Marine, Twelve-Cylinder, 300 h.p. (Fodens, Ltd.), 289*
— — Motor Starter for (C.A.V., Ltd.), 791*
— — 11·3-litre "Power Pack" (A.E.C., Ltd.), 353*
— — 190-b.h.p. "Power Pack" (Rolls-Royce Ltd.), 265*
— — 60-h.p. "Power Pack" (Sentinel (Shrewsbury) Ltd.), 392*
— — Protection Units for (Teddington Industrial Equipment, Ltd.), 393*
— — Starter for (C.A.V., Ltd.), 325*
— — Two-Stroke, for Automobiles, Tests of, 385*, 419*. See *Erratum*, 519
— — Two-Stroke, 12-h.p., for Motor Cars, 663*
— — See also *Tractors* and PARAGRAPH INDEX
— Old, Preservation of, 371. See LETTER, 500*

Engines, Petrol, Aeroplane. See *Aeronautics*
— — 16/30-h.p. Four-Cylinder (Coventry Victor Motor Co., Ltd.), 327*
— — Fuel and Lubricant Research with, 37*
— — Industrial, 190-h.p. V.8 Coventry Climax, 569*
— — Motor-Car, Developments in, 529, 534*, 565*, 587*
— — Motor Car, "Dyna Panhard," 535*
— — Motor-Car, 38-h.p., Lancia "Appia," 565*
— — Pressure Rise in, Stroboscopic Apparatus for Investigation of, 135*
— — 1½-h.p. Single-Cylinder (Villiers Engineering Co., Ltd.), 32*
— — See also *Aeronautics; Motor Cars*
— Pumping, Beam, of Metropolitan Water Board, Dismantling of, 501*
— — Cornish, and Rotative Beam Engines (Review), 581
— Steam, Beam, Butterley, 500*. See LETTER, 371
— — Beam, at Birmingham Museum of Science and Industry, 214*
— — Cornish, in Cornwall, 339*, 371
— — 77-h.p. High-Speed (Alley & MacLellan, Ltd.), 326
— — Marine, 1,450-i.h.p. Triple-Expansion, S.S. "Vigilant," 158
— — Marine. See also *Marine Propulsion; Turbines*
— — Vertical Compound, Belliss & Morcom, Ltd., 215*
— Vaporising-Oil 43-h.p. Four-Cylinder (Nuffield Organisation), 22*
— Winding. See *Winding*
— See also PARAGRAPH INDEX
Engineer Role as Administrator, 401
— Education. See *Education*
— Institutions. See *Institutions*
— Production, Institution of. See *Production*
— and Shipbuilders in Scotland, Institution of, Presidential Address by Sir W. Wallace on Survival at Sea, 458. See 465. See LETTER, 532; James Watt Dinner, 531
Engineering Apprentices. See *Education; Labour*
— Centre, Birmingham, Plans for, 429
— Contracts. See *Contracts; Legal*
— Education. See *Education*
— Exhibits, Birmingham Museum of Science and Industry, 214*. See LETTER, 276*
— Industries of Sheffield, 50, 57*. See *Erratum*, 240
— Laboratories. See *Laboratories; National Physical*
— Materials, Technology of (Review), 387
— in Next Two Thousand Years, 343, 381
— Societies. See *Institutions*
— Standards. See *Standards Institution*
— and Western Civilisation (Review), 195
— Works. See *Works*
England and France, Trials of Submarine Power Cable Between, 31, 170*
English Electric Co., Ltd., Stafford and Preston Works for, 19; 1,100-h.p. Dual-Fuel Engines, 136; 1,500-h.p. Diesel Engine and Generator for Locomotive, 172*; Motor for Shepcote Lane Works, Sheffield, 333*, 363*. See LETTER, 436*: 1,100-b.h.p. Dual-Fuel Diesel Engine, 354*; 1,500 h.p. Diesel-Electric Traction Set, 354*; 50-Cycle Single-Phase Electrification, Lancaster - Morecambe - Heysham Line, 459*; Plants for Portuguese Hydro-Electric Schemes, 660*; Protective and Auxiliary Relays, 768*
English Steel Corporation, Ltd., Significance of Izod Test in Gear Design, 166*; Large Universal Boring Machine, 449*; Production of Hollow-Forged Boiler Drums, 702*
Enthalpy-Entropy Diagrams for Gas Turbines (Review), 484
Epicyclic Gears, Calculation of Velocity Ratios of, 198*
— Gearbox Without Clutch Pedal (Leyland Motors, Ltd.), 694*
Equipment & Engineering Co., Ltd., Ultrasonic Flaw Detector for Rails, 11*. See *Addendum*, 412
"Escopette" Pulse Jet, 73*
Essex, Basildon, Experiments on Dressings for Soil Road at, 793
Etablissement C.D., Mobile Sawmill, 776*
Ethyl Silicate for Foundry Use (Monsanto Chemicals, Ltd.), 239
Europe, Coal Position in, Report on, 1952-53, 146
— District Heating in, 473*
— Oil Refining in, Report on, 210
— Steel Statistics for, Quarterly Bulletin, 510
European Economic Co-operation Organisation, Report on Coal Position in Europe, 146; Report on Oil Refining in Europe, 210; Report on Mechanical Handling Equipment in United States, 369
— Inter-National Rivers, Electric Development on, 141
— Organisation for Nuclear Research, Establishment of, 179
— Water Power, Report on, 178
Eutectic Alloys. See *Alloys* under *Metallurgy*
Evans, A. D., the Late, 782
Evaporating Plant, Sextuple-Effect, Model of (G. & J. Weir, Ltd.), 392*
Eve, J. L., Construction Co., Ltd., 275-kV Transmission System, 122*
Eversheds & Vignoles, Ltd., Electrical Equipment for Testing Frame for Ships' Structures, 115*; Miniature Recorder for Process Control, 290*; "Megger" Insulation Tester, 290
Ewbank & Partners, Development of London Airport, 397*
Excavator, ¼-cub. yd. Diesel-Driven (Newton Chambers & Co., Ltd.), 59*
— Trench Digging Machine, "Cheshire," Petrol-Driven (Salopian Engineers, Ltd.), 106*
Excelsior Motor Co., Ltd., 1½-h.p. Petrol-Engined Motor Truck, 32*
Exchanger, Heat, for 5,400-b.h.p. Marine Gas Turbine, 673*
— — Tubular, Specification, 829
Exhibition, Agricultural, Machinery and Smithfield Show, 745*, 790*, 810*
— Aircraft, and Flying Display, Farnborough, 307, 330*, 374*, 404*
— — Paris Air Salon, 19, 42*, 50, 73*
— Aluminium Building Construction, 120
— British Industries Fair, Report on Future of, 721
— Building Trades, Olympia, 652*, 727*
— Chemical Plant, Olympia, 11, 21, 237*, 257*, 289* (See *Erratum*, 361), 321*, 353*, 391*
— and Conferences, Forthcoming, 151, 279, 407, 567, 695, 823
— — Fuel Efficiency, Manchester, 691
— Cycle and Motor Cycle, Earl's Court, 659
— Electronic Equipment and Apparatus, Manchester, 19, 183
— Engineering, Marine and Welding, Olympia, 11, 21, 237*, 257*, 289* (See *Erratum*, 361), 321*, 353*, 391*
— — Welsh Industries Fair, 412*
— Historic Electrical Machines and Apparatus, Crompton Parkinson, Ltd., 466
— "Model Engineer," 275
— Motor Car, International, Earl's Court, Engineering Developments at, 529, 534*, 565*, 587*
— Platinum Metals, 269, 461, 614
— Radio and Television, National, 338
— Royal Agricultural Society's Show, Blackpool, 22*, 44*, 85*, 105*
— Sheffield, Hardness-Testing Equipment, Programme, 314
— Wind-Power Equipment, Enfield Cables, Ltd., 33*
— See also PARAGRAPH INDEX
Experimental Tank. See *Tank*
Explosive, Blasting, Manufacture in India, 627
Explosions, Colliery. See *Accidents*
Export Trade. See *Trade;* and *Industries* in PARAGRAPH INDEX

F.

FACTS, Files and Action in Business and Public Affairs (Review), 484
Factory Accidents. See *Accidents*
— Act, 1937, Duty to Fence Dangerous Machinery, 615
— Acton, Ice-Cream, of T. Wall & Sons, Ltd., 502*
— Aero-Engine, East Kilbride, 717*
— Annfield Plain, Ransome & Marles Bearing Co., Ltd., 467, 555
— Buildings of Tubular Construction (Tubewrights, Ltd.), 617*
— Employment of Women. See *Labour*
— Fallings Park, of Guy Motors, Ltd., Extension to, 108*
— Heating, Investigations on, 422
— Management. See *Works Management*
— Nylon, Control of Air Conditioning in, 62
— Switchgear, Loughborough, Brush Electrical Engineering Co., Ltd., 569*
— Yeast, Dovercourt, Equipment at, 76*
— See also *Works*
Fair, Trade. See *Exhibition*
Fairhurst, H. S., & Son, Tank Factory, Leyland, Lancashire, 630*
Fairweather, H., & Co., Ltd., Reinforced-concrete Workshop, 93*
Falkus, Major A. E., on Trends in Loudspeaker Design, 760
Fallings Park Factory of Guy Motors, Ltd., Extension to, 108*
Fan, Axial, with External Motor (Keith Blackman, Ltd.), 395*
Faraday House Old Students Association, Annual Dinner, 595
"Farfadet" Convertible Helicopter, 75*
Farming. See *Agriculture; Tractors*
Farnborough Aerodrome, Aircraft Exhibition and Flying Display, 307, 330*, 374*, 404*
Farthing, V. L., on Research and Production in Engineering, 594
Fasteners, Panel, "Vibrex" (Silentbloc, Ltd.), 827*
— Wire-Rope, Dynamic Testing of (E. H. Bentall & Co., Ltd.), 734*
Fatigue Life of Aircraft Structures, 423
— in Materials, Investigations on, 209
— Tests of Metals. See *Fatigue* under *Tests (Materials)*
Fawssett, E., the Late, 110
Federation of British Industries, Memorandum on Parallel Operation of Public and Private Electricity Systems, 626
Feed Water Softener. See *Water*
Feeder for Hydraulic Transport of Coal, 296*
Female Labour. See *Labour* and PARAGRAPH INDEX
Fence, Snow, on Roads, Experiments on, 178
Fencing of Dangerous Machinery, Legal Decisions on, 615
Fenny Compton Embankment, Tool for Deep-Level Grouting, 779*
Fens, The, and Vermuyden (Review), 706
Fenwick, W. O., the Late, 308
Ferguson, H., Ltd., Tractor-Mounted Disc Terracer, 23*; Heavy-Duty Disc Harrow, 23*; Combined Seeder and Cultivator 86*; Tractor-Mounted Crane, 87*
Ferguson, J. M., on Tests of Launching Greases, 468
Ferguson, Pailin, Ltd., 11-kV Outdoor Fuse-Switch for Ring Mains, 96*
Fermentation Plant at Dovercourt Yeast Factory, 77*
Ferranti, Ltd., Airstream Direction Detector, 480*; Side-Register Control Equipment for Reeling Sheet Material, 669*
Ferro-Concrete. See *Concrete, Reinforced* and PARAGRAPH INDEX
Fiat Diesel Engine for Motor Cars, 588*
Fiennes, M. A., on Engineering Industries of Sheffield, 57*. See 50. See *Erratum*, 240
Fife, R. B., the Late, 558
Files, Examples of (J. Bedford & Sons, Ltd.), 57*
— Facts and Action in Business and Public Affairs (Review), 484
Filter, Dual-Type (Zwicky, Ltd.), 324
— Graded, Use in Construction of Borehole, 821
— Unit, Pipeline (Doulton & Co., Ltd.), 327*
— — for Transformer Oil (Stream-Line Filters, Ltd.), 395*
— Vacuum, Rotary, with String Discharge (Stockdale Engineering Co., Ltd.), 260*
Findlay, A., & Co., Ltd., Design and Research Building of C. A. Parsons & Co., Ltd., 713*
Finney Presses, Ltd., 50-ton Press with Pneumatic-Hydraulic Accumulator, 291*. See *Erratum*, 361
Fire Armour, Ltd., Demonstration of Extinguishing Oil Fires by Fog Nozzles, 671*. See LETTER, 787
— Detectors for Aircraft Engines (Graviner Manufacturing Co., Ltd.), 576*
— Domestic, and Atmospheric Pollution, 747
— — Smoke from, 497
— Oil, Extinguishing by Fog Nozzles, Demonstration of, 671*. See LETTER, 787
— Prevention under London Transport Escalators, 822
— Research Organisation, Joint, Exhibits at Building Exhibition, 727
— — Station, Annual Report, 83
— Resistance of Prestressed Concrete, 490
Firedamp Explosions. See *Accidents*
Firing Unit, Waste-Oil (Kamel Products, Ltd.), 640*
Firth Brown Tools, Ltd., Hardening of Saw Segments, 91*
Firth-Derihon Stampings, Ltd., Turbine Blades for Jet Engines, 91*
Firth Sterling Steel and Carbide Corporation of Pittsburg, Electrical Process for Cutting Hard Metals, 690
Firth, T., & J. Brown, Ltd., Steel-Making Electric Furnace, 90*; Forged Boiler Drums, 90*
Firth-Vickers Stainless Steels, Ltd., "Centrispun" Steel Castings, 91*; Shepcote Lane Plant of, 332*, 362*. See LETTER, 436*
Fischer-Tropsch Process, Developments in, 296, 297
Fishwick, Dr. W., on Vibrations of Machine-Tool Structures, 707*
Fits and Limits, New British Standard System of, 817
Fitting of Shafts in Holes. See *Gauges*
— and Valves, Design of (Review), 134
Fitton, G., on Utilisation Factor in Public Lighting, 370
Five Mile Creek, Wyoming, Sediment Problems in, 3*
Flame-Failure Devices, Electronic, Operating Range of, 171
— Radiation and Heat Transfer in Open-Hearth Furnaces, 725, 744
— — Research, International, at Ijmuiden, 488, 555*
— Their Structure, Radiation and Temperature (Review), 418
Flaw Detector, Magnetic, Minchom-Sempun (R.P.R. Patents, Ltd.), 736*
— — for Rails, Ultrasonic (Branson Instruments, Inc.), 11*. See *Addendum*, 412
Fleet. See *Warships*
"Fleuret" Twin-Jet Training Aircraft, 43*
Flight. See *Aeronautics*
Float, Power, for Concrete Floors (Columbus-Dixon Organisation, Ltd.), 652*
"Floater" Magnetic, for Separating Ferrous Sheets (J. Neill & Co. (Sheffield), Ltd.), 58*
Floating Dock. See *Dock*
Flood Warning System for East Coast, 211
Flooding, Coastal, Committee on, Interim Report of, 211
Floor-Cleaning Machine, Battery-Driven (S. R. Cowlard, Ltd.), 831*
— Concrete, Power Float for (Columbus-Dixon Organisation, Ltd.), 652*
— and Roofs, Concrete, Supports for Shuttering for (Blaw Knox, Ltd.), 447*
Flooring, Timber, for Aluminium-Alloy Bascule Bridge, Aberdeen (Acme Flooring & Paving (1904), Ltd.), 481*
Flow of Air Masses, Control Valves for, 705*
— Compressible, Through Venturi Meter, Calculation of, 147
— Diagrams of Chemical and Petroleum Plant, Symbols on, Specification, 798
— Fluid, Measuring Devices, Problems of, 6*, 35*. See LETTER, 244*
— Meters, Electromagnetic (Tobi, N.V.), 542*
— — Mercurial (G. Kent, Ltd.), 702
Floyd, on Structure of Nickel-Rich Alloys, 541
Flue Gases, Sulphur Removal from, 145
Fluid-Flow Measuring Devices, Problems of, 6*, 35*. See LETTER, 244*
— Friction. See *Hydrodynamics*
— Mechanics and Combustion Research Laboratory, of Brown, Boveri & Co., Ltd., 609*
Fluidrive Engineering Co., Ltd., Fluid Clutch for Bascule Bridge, Aberdeen, 482*
Fluorescent Tubes, Developments in (General Electric Co., Ltd.), 388*
Fluoroscope, Daylight, Portable (Metropolitan-Vickers Electrical Co., Ltd.), 573*
Fluoroscopy Unit, Mobile (Solus-Schall, Ltd.), 293*
Flushing, "de Schelde" Shipyard, Use of Marking-Off Methods at, 486, 571*
Flying Boats. See *Aeronautics*
Fodens Ltd., 60-kW Diesel-Driven Generator Set, 289*; Twelve-Cylinder 300-h.p. Marine Oil Engine, 289*; Tests, 100-b.h.p. Six-Cylinder Oil Engine, 290
Fogs and Atmospheric Pollution, 747
— London, of December, 1952, Effects of, 497
— Nozzles for Extinguishing Oil Fires, 671*. See LETTER, 787
Footplate Philosophy and Locomotive Driving, 433
Forage Harvester (Silorators, Ltd.), 44*
Forbes, W. D., on Air Conditioning Control, 61
Ford, Prof. H., on Stepped-Strain Curve of Aluminium Alloys, 438
Ford, J., the Late, 526
Ford "Prefect" Motor Car, 534*
Fords (Finsbury), Ltd., Vial Capper and Spinner, 356*
Forest Products Research Board, Annual Report, 337
Forestry, Mechanical Equipment for (D. Brown Tractors (Engineering), Ltd.), 826*
Forging, Drop. See *Drop Forging*
— Press. See *Press* under *Machine Tools*
— and Rods, Aluminium-Bronze, Specification, 768
Form and Function in Architecture and Engineering, 722
Forsyth, A. G., on Power Plants for Rotary Wing Aircraft, 454*
Fort Sumner Dam, New Mexico, Degradation of, 4*
"Foseco Foundry Developments," New House Journal, 371
Foster Transformers, Ltd., Wimbledon and Leatherhead Factories of, 471*
Fouga & Co., "Magister" Twin-Jet Training Aircraft, 42*
Foundation of Design and Research Building of C. A. Parsons & Co., Ltd., 713*
— of Machine Tools, Effect on Vibrations, 707*
— for Prestressed-Concrete Grain Silo at Dublin, 580*
— and Trusts (Review), 227
— for Uskmouth Power Station, 552*
Foundry, Centrifugal Casting, of Millspaugh, Ltd., 594, 629*
— Die-Casting, of Non-Ferrous Die Casting Co., Ltd., Reorganisation of, 185*
Foundry Equipment, Ltd., Sand Drying and Filling Plant for Pipe Bending, 313*
— Ethyl Silicate for Use in, 239
— Iron, Hot-Metal Receivers for (Monometer Manufacturing Co., Ltd.), 27*
— — and Steel, Regulations, 1953, 499
— Practice, Investigations on, 586
Foundry Services, Ltd., "Foseco Foundry Developments," Publication of, 371
— Techniques, Developments in, 222
— Use of Shell Moulding Process in, 251, 285
— Work. See also *Die Casting*
— See also *Castings; Moulding*
Foundrymen, Institute of British. See *British*
Fox, S. & Co., Ltd., Shepcote Lane Works, Sheffield, 332*, 362*. See LETTER, 436*
Fractionating Columns, Distillation Tray for (W. J. Fraser & Co., Ltd.), 325*
Fracture, Brittle, of Iron Alloys, 772
— — of Steel, Glasgow Conference on, 70, 187, 220. See 639
Frame, Rigid, Analysis by Electronic Digital Computer, 230*, 277*
France and England, Trials of Submarine Power Cable Between, 31, 170*
— See also *French*
Francis, M., on Cost of Automatic Train Control, 147. See 49, 53
— Turbines. See *Turbines, Hydraulic*
Frankau, A. M., on Water-Cooling of Open-Hearth Furnace, 772
Fraser, D., on Aircraft De-Icing by Thermal Methods, 424
Fraser & Fraser, Ltd., Triple-Pass Vertical Boiler, 318*
Fraser, J. J., the Late, 170
Fraser, W. J., & Co., Ltd., Ultrasonic Examination of Welds, 211; Distillation Tray for Fractionating Columns, 325*
Freeman, Fox & Partners, Testing Frame for Ships' Structures, 115*
Freeman, R., on High-Speed Track for Motor Vehicles, 747
French Aircraft and Aircraft Industry, 19, 42*, 50, 73*
— Electricity Authority, Trials of Submarine Cables Between England and France, 31 170*
— Power Resources and Their Utilisation, 619
— See also *France*
Frequency Allocation for Television, Report, 81
Friction Linings, Bonding Process for (T. Broadbent & Sons, Ltd.), 583
Friese-Greene, G. H., on W. H. Wallaston, 1766-1828, 614*. See 269, 461
Front Suspension of Ford Cars, 534*
Frost, N. E., on Equipment for Compression-Creep Tests, 28*
Fryma Machinery Co., Ltd., High-Speed Milling and Grease-Producing Plant, 253*
Fuel, Alternative, for British Power Stations, 828
— Conservation, Productivity Report on, 338
— Consumption, 5,400-b.h.p. Marine Gas Turbine, 676*
— — 3,500-h.p. Pametrada Marine Gas Turbine, 493*
— — of Pressure-Charged Gas Engines, 748*
— Economy and Back-Pressure Steam Plant, Government Survey, 28
— — and District Heating, 422, 473*, 507*
— Efficiency Exhibition and Conference, Manchester, 691
— — Organisation, Industrial, Proposed, Report on, 29
— Institute of, French Power Resources and Their Utilisation, by J. Couture, 619; Conservation of Nation's Fuel and Power Resources, by Dr. F. M. H. Taylor, 735; *North-Western Section:* Air Pollution and the Law, by A. Marsh, 787
— Liquid, Atomisation of (Review), 803
— — See also *Oil Fuel*
— Luncheon Club, Fuel and Productivity, by Dr. A. Parker, 618
— Motor. See also *Gas; Motor; Paraffin; Petrol*
— Oil. See *Oil Fuel*
Fuel and Power, Ministry of, Questionnaire on Back-Pressure Steam Plant, 28; Report on Proposed Industrial Fuel Efficiency Organisation, 29; Report on Economy in Construction of Power Stations, 498; Formation of National Industrial Fuel Efficiency Service, 562; Research on Safety in Mines, Annual Report, 626; Statistical Digest of, 755

Fuel and Power, Resources, Britain's, Conservation of, 735
— Production and Utilisation in France, 619
— Pump. See *Pump*
— Research Board, Annual Report, 145
— — Station, Fischer-Tropsch Experimental Plant, 296, 297
— Smokeless, Availability and Distribution of, 498
— Supply Unit for 1,500-h.p. Diesel-Electric Locomotive, 172*
— Transfer System, Electro-Pneumatic (Dunlop Rubber Co., Ltd.), 151*
— Utilisation and National Prosperity, 618
— See also *Coal; Oil; Gas; Pulverised Coal*
Fulham-Simon Carves Process for Sulphur Removal from Flue Gas, 145
"Fullway" Accelerator Pump, 287*
Fume Extractor, Portable (Keith, Blackman, Ltd.), 290*
Function and Form in Architecture and Engineering, 722
Fund, "Revolving," for Industry, 243
Furnace, Annealing, for Seamless Tube Manufacture, 164*, 226
— Blast, Pneumo-Hydraulic Control of Blowers for (General Electric Co., Ltd.), 761*
— — Practice, Steelmaking Related to, 701
— — Researches on Plant and Equipment, 116
— — Slag Cement Plant at Cluanie Dam, 557*. See *Erratum*, 640
— Boiler. See *Stoker*
— Electric, Heat Treatment, for Seamless Tube Manufacture, 164*
— — Steel-Making (T. Firth & J. Brown, Ltd.), 90*
— — Steel Melting, 10-cwt., Electric-Arc (Electric Furnace Co., Ltd.), 685*
— for Flame-Radiation Research, Ijmuiden, 555*
— Gas-Fired, Low-Pressure for Die-Casting, 185*
— — Fired, for Pipe Bending and Fabrication (Incandescent Heat Co., Ltd.), 313*
— — Fired, Portable, for Pipe Fabrication (Radiant Heating, Ltd.), 313*
— — Fired, Slab-Heating at Shepcote Lane Works, Sheffield, 333*, 363
— — Fired, Stress-Relieving, for Pipe Fabrication (Incandescent Heat Co., Ltd.), 313*
— Industrial, Smoke from, 497
— Melting, Vacuum, Induction (Allifor Trading Co., Ltd.), 685*
— Linings, Ethyl Silicate for Use as Bond, in, 239
— Melting, Steel, 10-cwt. Electric-Arc (Electric Furnace Co., Ltd.), 685*
— Oil-Fired, for Steel Strip Manufacture, Ductile Steels, Ltd., 545*
— — Fired Rotary Tilting, Millspaugh Centrifugal-Casting Foundry, 594, 629*
— Open-Hearth and Bessemer Process, Relative Costs, 701
— — Hearth, Emissivity, Flame Radiation and Heat Transfer in, 725, 744
— — Hearth, Water Cooling of, 772
— See also *Cupolas*
Fusarc, Ltd., Manual Continuous Welding Machine, 294*
Fuse-Links, Cartridge, for Use in Plugs, Specification, 207

G.

GALBRAITH, LIEUT.-COL. R. F., on Developments in Structural Engineering, 501
Gale, W. K. V., on Cornish Engine in Cornwall, 339*, 371
Galvanising Bath, Hot, 180-kW and 275-kW (Major Electric Furnace Pty., Ltd.), 638*
Garage, Stockwell, London Transport Executive, 703*
Gardner, C. A., the Late, 590
Garoche, B., on Unit Loads and Palletisation, 522
Garrett Corporation, Air-Turbine Accessory Drives for Aircraft, 777
Gas Council, Report on Operating Range of Electronic Flame-Failure Devices, 171; Report on Pipe Bending and Fabrication Shop, 313*; Annual Report, 586
— Engine. See *Engine, Gas*
— Fired Furnaces. See *Furnaces*
— Flames, Length of, in Open-Hearth Furnace, 725, 744
— Flue, Sulphur Removal from, 145
— and Gas Works. See also PARAGRAPH INDEX
— Inert, Generator for (W. C. Holmes & Co., Ltd.), 149*
— Main, Cathodic Protection of, 650
— Production in France, 619
— Turbine. See *Turbine*
— Welding. See *Welding*
— See also *Oxygen*, etc.
Gaseous Explosions. See *Accidents*
Gasoline. See *Petrol; Engine, Petrol; Aeronautics*
Gasworks, Birkenhead, Stockpiling and Loading Equipment, 822*
Gateshead Works of Clarke, Chapman & Co., Ltd., 95
Gatwick Airport, Government Scheme for, 139
Gauge, Draught, Differential (G. Kent, Ltd.), 384*
— Pressure, Plunger (Bryce Burger, Ltd.), 670*. See *Addendum*, 736
— Slip, Interferometer for Measuring, 757*
— Strain, Electrical-Resistance, Use on Concrete Structures, 487
— — Vibrating-Wire, for Long-Term Tests on Structures, 153*
— Vacuum, Sensitive, Guarding Valve for (Pametrada), 297*
Gauld, G. A., on Tunnels for Machkund Hydro-Electric Scheme, 683
Gauldie, K., on Performance of Jaw Crushers, 456*, 485*
"Gay Jane," Motor Fishing Cruiser (Albatross Marine, Ltd.), 777*
Gear-Cutting Machines. See *Gear* under *Machine Tools*
— Design and Performance, Significance of Izod Test on, 166*
— Epicyclic, Calculation of Velocity Ratios of, 198*
— — Gearbox without Clutch Pedal (Leyland Motors, Ltd.), 694*
— Lubrication of, 627, 632. See LETTER, 692
— Speed-Reducation, Heliocentric (Sanderson Bros. & Newbould, Ltd.), 59*
— Steering. See *Steering*
— Variable-Speed, and Pulley Drives (Bourdon Tools, Ltd.), 829*
Gearbox (A. Wiseman & Co., Ltd.), 356*
— Drive for Baling Machine, 746*
— Epicyclic, for Motor Vehicles, without Clutch Pedal (Leyland Motors, Ltd.), 694*
— Five-Speed Constant-Mesh (D. Brown & Sons (Huddersfield), Ltd.), 191*
— Worm Reduction (Motor Gear & Engineering Co., Ltd.), 291*
Geared Turbines, Marine. See *Marine Propulsion*
Gearing for Bascule Bridge, Aberdeen (Crofts (Engineers), Ltd.), 482*
— Reduction, Marine, Investigations on Defects in, 628
— Reduction, for 5,400-b.h.p. Marine Gas Turbine, 673*
— Research Association, Admiralty-Vickers, Significance of Izod Test in Gear Design, 166*
Gem Stones, Production Methods for (Review), 676
GEMA Betriebsgesellschaft m.b.H., Hydraulic Copying Attachment for Lathe, 235*
General Electric Co., American, Schenectady, 1,600-h.p. Variable-Gauge Diesel-Electric Locomotive, 233*; 75th Anniversary of Firm, 563
General Electric Co., Ltd., Electric In-Silo Grain Dryer, 85*; Lemington Glass Works of, 94; High-Frequency Induction Bar-Hardening Machine, 121*; Point-Contact Germanium Triode, 126*; Receivers for Broadcast Monitoring Service, 137*; Developments in Fluorescent Tubes, 388*; Electrical Equipment of Surrey Docks Substation, 437*; Mercury-Vapour Discharge Lamps for Photo-Printing, 547*; 60-MW Turbo-Generators, Uskmouth Power Station, 554*; Divers' Intercommunication Equipment, 555; Long-Range Photo-Electric Protective System, 637; System for Remote Indication of Measurements, 672*; Lighting Equipment for Design and Research Building of C. A. Parsons & Co., Ltd., 714*; Pneumo-Hydraulic Control for Blast-Furnace Blowers, 761*; Electronic Arc Suppression in Traction Rectifiers, 773; Electric Motor for Circular-Kiln Brick-Making Plant, 825*
— Managers, Institute of, Objects of, 755
Generating Set, 588-kVA Diesel-Driven (W. H. Allen, Sons & Co., Ltd.), 257*
— — 1,280-kW Diesel-Driven (Harland & Wolff, Ltd.), 394*
— — Marine, 200-kW Diesel-Driven (British Polar Engines, Ltd.), 391*
— Station. See *Power Station*
Generator, Electric, 25,000-kVA Ala Hydro-Electric Plant, 268*
— — Alternating-Current, for Lighthouses, Holmes's, 216*
— — Alternating-Current, "Stavolt" Armature for (British Thomson-Houston Co., Ltd.), 259*
— — 57·4-MVA, Castelo do Bode Power Station, 660*
— — 1,250-Watt Diesel-Driven (Dale Electric (Yorkshire), Ltd.), 213*
— — Diesel-Driven (Electric Construction Co., Ltd.), 295*
— — 52-kW Diesel-Driven (J. I. Thornycroft & Co., Ltd.), 261*
— — 500-h.p., for Diesel-Electric Locomotive, 139*. See *Addendum*, 212
— — 1,500-h.p., for Diesel-Electric Locomotive, 172*
— — at High Altitudes, Wear of Carbon Brushes of, 726
— — 15,000-kVA, Julia Power Station, 181*
— — Magnetisation of Cores of, Investigations on, 697*, 731
— — 500-kW Marx and Transformer (Foster Transformers, Ltd.), 471*
— — New, for British Power Stations, 827
— — 130-b.h.p. Oil-Engined (Rolls-Royce Ltd.), 265*
— — and Pumping Set, Combined (A. Lyon & Co. (Engineers), Ltd.), 790*
— — 25-MW, Singapore Power Station, 283
— — 60-MW, Uskmouth Power Station, 554*
— — 32-MVA, Vila Nova Power Station, 662*
— — See also *Turbo-Generators*
— for Inert Gas (W. C. Holmes & Co., Ltd.), 149*
— Oxygen, Portable (K. W. Chemicals, Ltd.), 704*
— Set, 60-kW Diesel-Driven (A.E.C., Ltd.), 353*
— — 60-kW Diesel-Driven (Fodens Ltd.), 289*
— — 208-kW Diesel-Driven (National Gas & Oil Engine Co., Ltd.), 323*
— — 70-kW Diesel-Driven, Marine (J. and H. McLaren, Ltd.), 323*
— — 750/1,000-kW Gas-Turbine (Ruston & Hornsby, Ltd.), 11
"Genimec" Twin-Spray Rig, 86*
Gent & Co., Ltd., Electronic Chiming Installation for Clock, 664
Gerätebau-Anstalt Balzers, Vacuum Induction Melting Furnace, 685*
Gercke, Dr. M. J., on Collapsing Load of Strut with Elastically-Fixed Ends, 67*
German Motor Roads, Construction of, 724
Germanium Triode, Point-Contact (General Electric Co., Ltd.), 126*
Germany, Coal Production in, 691
— United Kingdom and United States, Engineering Exports Compared, 243
Gibberd, F., Development of London Airport, 397*
Gifford, E. W. H., Jacking Unit for Prestressing Concrete, 606*
Gilberd (or Gilbert), William, 350th Anniversary of, 755. See LETTER, 819
Giles, L., & Partners, Ltd., All-Welded Aluminium Alloy Motor "Morag Mhor," 180*
Girder, Lattice, Behaviour of, Report on Investigations on, 286
— See also *Beams; Bridges; Floors*
Glasgow Conference on Brittle Fracture of Steel, 70, 187, 220. See 639, 772
— Corporation Water Supply, Extensions to, 240
— — Water Department, Annual Report, 275
— Underground Railway, Proposed Extension to, 626
— University, Investigations of Combined Magnetisation of Magnetic Materials, 517, 697*, 731
Glass Feeder, Molten, Temperature Control of, 51
— Models for Stress Determination. See *Photo-Elastic*
Glover, Col. G. T., the Late, 78
Glover, W. T., & Co., Ltd., Submarine Cable Between England and France, 31, 170*
Godfrey, Sir G., & Partners, Ltd., Roots Blower with Filter and Silencer, 262*
Goerner, Dr. E. W., on German Motor Roads, 724
Goodeve, Sir C. F., on Milling of Rail Ends and Effect on Productivity, 299
Gooding, P. H. T., on Economics of Concrete Roads, 724
Goodlet, Dr. B. L., on Outlet for Economic Nuclear Power, 345*. See 372. See *Erratum*, 375
Goodwin, Barsby, Ltd., Experimental Stone-Crushing Plant, 281*
Goodwood International Race, Motor Car, 275
Gordon, Lord Dudley, on Engineering in Next Two Thousand Years, 381. See 343
Gotaverken A/B 3,000-s.h.p. Supercharged Marine Diesel Engines, 251*
Gourley, J. H., the Late, 334
Government Memorandum on Television Policy, 659
— Railways. See *Railways*
— White Paper on United Kingdom Atomic-Energy Project, 657
Grader, Maintenance, 42-b.h.p. Diesel-Engined (Aveling-Barford, Ltd.), 668*
Graduate Engineers and Training for Management, 401
Grain Dryer, In-Silo, Electric (General Electric Co., Ltd.), 85*
— Silo, Prestressed-Concrete, at Dublin, 577*
Grand Contour Canal, Project for, 741*
Grates. See *Furnaces; Stoker*
Graving Dock. See *Dock*
Gravity Conveyors. See *Conveyors*
Greases, Launching, Tests of, 468
— Producing and Milling Plant, High-Speed (Fryma Machinery Co., Ltd.), 253*
Great Britain to America, Submarine Telephone Cable, 755
Greenock, Watt Monument, Appeal for, 660
Greenwich Observatory, Royal, Hurstmonceux, Astronomer Royal's Report, 125, 211
Greer-Mercier Pneumatic-Hydraulic Accumulator for 50-ton Press, 291*. See *Erratum*, 361
Grégoire Rear Suspension for Motor Cars, 588*
Grey, G. C., the Late, 789
"Grey Goose," H.M. Gunboat, 5,400-b.h.p. Gas Turbine for, 673*
Grillages, Plastic Design of, 804*
Grimston Astor, Ltd., Aluminium-Alloy Motor Launch for Pakistan, 416*
Grinding Machines. See *Machine Tools*
— Wheel. See *Machine Tools*
Ground Resonance of Helicopters, 779
Grouting, Deep-Level, Tool for, 779*
Guard Bridge Paper Co., Ltd., Electronically-Controlled Paper-Making Machine, 595*
Guide Vanes, Annular-Flow, for Hydraulic Turbines, 550*
Guider, Web, Hydronic (Ferranti, Ltd.), 669*
Gulf Oil Corporation, Investigation on Oil Cooling of Cutting Tools, 690
Gunboats. See *Warships*
Gunn, D. C., on Influence of Coal Properties on Combustion, 61
Guy Motors, Ltd., Extensions to Fallings Park Works, 108*; One-Man Operated Omnibus, 607
Guyon, Y., on Statically Indeterminate Structures in Elastic and Plastic States, 490, 551
Gwyer, R. G. B., on Decentralisation of British Railways, 20. See LETTER, 84; on Research Laboratory for Docks and Inland Waterways Executive, 212. See 120, 138*
"Gyron" Jet Aero Engine, 179

H.

HACK-SAWS. See *Machine Tools*
Hacking, Sir J., on Developments and Future Possibilities in Electricity Generation, 827. See 818.
Hackney Power Station, Prevention of Spontaneous Combustion in Coal Stocks at, 727*
Hadden, G. N., & Sons, Ltd., Heating System for Research Building of C. A. Parsons & Co., Ltd., 714
Hadfields Ltd., 12-cub. yd. Dragline Bucket, 59*; Crushing Rolls for Ironstone, 59*; Creep-Resisting Machines, 506*
Halcrow, Sir W., & Partners, Development of London Airport, 397*; Uskmouth Power Station, 552*; Construction of Cluanie Dam, 557*. See *Erratum*, 640
Hall, Dr. E. O., on Fracture of Alpha Iron, 772
Hall, G. E., on Smoke from Domestic Fires and Industrial Furnaces, 497
Hall, J. & E., Ltd., Lift Installation for Research Building of C. A. Parsons & Co., Ltd., 715
Hamburg, District Heating in, 473*, 507*
Hamilton Standard Aircraft-Cabin Refrigerating Unit, 255*
Hamilton Surface Grinders, Ltd., Strip-Grinding Machines, 365*
Hamilton, W., & Co., Ltd., M.S. "Pavia," 92*
Hammer Mill, Electric (Scottish Mechanical Light Industries, Ltd.), 791*
Handley Page, Ltd., Aircraft Test House and Research Laboratories, 150* "Victor" Bomber Aircraft, 374*; General-Purpose Air Liner, 471
Handling, Bulk, of Cement, Transporter and Silo for, 109*
— Equipment, Retail, for Coal and Coke (Charroid, Ltd.), 605*
— Materials, Equipment and Methods in United States, Report, 369
— Mechanical, Demonstration, by Army, 499
— — Use of Pallets and Fork-Lift Trucks for, 522
Hankey Committee on Television, 573
Harbour Board, Southampton, 150th Anniversary of, 500
— Lyttelton, New Zealand, Investigations by Hydraulics Research Board, 18
— Table Bay, Model of, Measurement of Wave Heights in, 245*, 267*
— See also PARAGRAPH INDEX
Hardening of Metals. See *Heat Treatment* under *Metallurgy*
Hardness Tests. See *Tests (Materials)*
Hardy, A. C., on Ship Types and Through Transport, 522
Hardypick, Ltd., 5-h.p. Electric Mine Drilling Machine, 58*
Harland & Wolff, Ltd., Stabilisers of S.S. "Andes," 491; Model of Gas-Turbine Driven Compressor, 394*; Horizontally-Opposed Twin-Cylinder Compressor, 394*; Diesel-Driven 1,280-kW Generating Set, 394*
Harmer, F., the Late, 366
Harnden, C. A., Ltd., Side-Register Control Equipment for Reeling Sheet Material, 669*
Harris, L. E., on Preservation of Old Engines, 371. See LETTER, 500*
Harrow, Disc, D. Brown-Bentall (E. H. Bentall & Co., Ltd.), 790*
— — Heavy-Duty, Reversible (H. Ferguson, Ltd.), 23*
Hartlepool Works of Richardsons, Westgarth & Co., Ltd., 94
Hartt, F., the Late, 813
Harvester, Combine, Tractor-Hauled (Marshall, Sons & Co., Ltd.), 810*
— — Tractor-Driven (Ransomes, Sims & Jefferies, Ltd.), 85*
— Forage (Silorators, Ltd.), 44*
Harwell Atomic Energy Establishment, Production of Radioactive Materials at, 157
Hastie, B., & Co., Ltd., versus Rees, Legal Decision on, 179
Haulage in Mines, Chief Inspector's Report, 242
"Hawker Hunter" Aeroplane, Air Speed Record, by, 338, 374*
Hawksley Lecture on Relaxation Methods: A Retrospect, 691
Hayes Engineers (Leeds), Ltd., Hydraulic Copying Attachment for Machine Tools, 185*
Hayes, Middlesex Research Laboratory for Docks and Inland Waterways Executive, 120, 138*. See LETTER, 212
Haylock, C., on Saving Time in Drawing Office, 692. See 625
Hazen, D. C., on Boundary Layer and Circulation Control, 453
Head, Wrightson & Co., Ltd., Aetna-Standard Automatic Draw Bench, 162*; 500-ton; Floating Dock on Lake Nyasa, 200* Aluminium-Alloy Bascule Bridge, 481*
Headlights, Motor-Car, Work of Road Research Board, 177
Heat Engines. See *Engines; Turbines; Aeronautics*
— Exchanger for 5,400-b.h.p. Marine Gas Turbine, 673*
— — Tubular, Specification, 829
— Transfer and Flame-Radiation Research, 555*
— Treatment of Metals. See *Metallurgy*
Heater, Air, Gilled-Tube, Bled-Steam (Wellington Tube Works, Ltd.), 417*
— Surface, Electric, for Drum (Isopad, Ltd.), 294*
— — Electric, for Sulphonating Pot (Isopad, Ltd.), 294*
Heating in Buildings, Measurement of Efficiency of, 422
— District, and British Power Stations, 827
— — Problems and Application of, 422, 473*, 507*
— Domestic, Atmospheric Pollution from, 145
— Machine, Pipe, Electric (A.I. Electric Welding Machines, Ltd.), 257*
— Space, Problems of, 61
— Systems, Central, Hot-Water, Accelerator Pump for (Ryaland (Manchester), Ltd.), 287*
— — of Research Building of C. A. Parsons & Co., Ltd., 714
— — at Tank Factory, Leyland, 631*
— and Ventilating Engineers, Institution of *Summer Meeting, Southport:* Some Scientific Thoughts on Space Heating, by Prof. R. J. Sarjant, 61; Influence on Coal Properties on Combustion, with Particular Reference to Chain Grate in Shell Boiler, by D. C. Gunn, 61; Air Conditioning: Some Practical Aspects of Control, by W. D. Forbes, 61
Heaton Works of C. A. Parsons & Co., Ltd., 93; Design and Research Building, 713*
Hebburn Works of Bushing Co., Ltd., 95
— — of Pyrotenax, Ltd., 95
— — of A. Reyrolle & Co., Ltd., 93

Hedge Trimmer, Tractor-Operated (F. W. McConnel, Ltd.), 105*
Heenan & Froude, Ltd., Refuse-Disposal Plant, Sheffield, 633*
Held Machine Building Corporation, Copying Lathe with Electromagnetic Tool Control, 778*
Heinecke, C. E., & Co., Ltd., Divers' Intercommunication Equipment, 555
Helicopters. See *Aeronautics*
"Helix" Turbo-Electric Oil Tanker, 619*
Hemel Hempstead Factory of Rotax, Ltd., 617*
Henley's, W. T., Telegraph Works, Co., Ltd., Cable Factory of, 94; 275-kV Transmission System, 122*; Photo-Elastic Protection of High-Voltage Equipment, 648
Herbert, A., Ltd., Thread-Rolling Diehead, 683*
"Heron," Series 2 Air Liner, 331*
Herstmonceux, Royal Greenwich Observatory, Astronomer Royal's Report, 125, 211
Heyman, Dr. J., on Plastic Design of Grillages, 804*
Heywood, Dr. H., on Solar Energy, Past, Present and Future Application of, 377*, 409*. See 372
Heywood, T. E. H., the Late, 789
Hibbard, H. L., on Structures for High-Speed Aircraft, 423
Hicks, R., on Horizontal Thrust, on Two-Pinned Parabolic Arch, 34*; on Reinforced Circular Hole in Concrete Slab, 808*
"Hico" Falsework Centring, 447
Higgs Motors, Ltd., Low-Speed Geared Electric Motors, 320*
High Frequency. See *Electric*
— Temperature Tests. See *Tests (Materials)*
Highways. See *Roads*
Hill, A. W., on Effect of Abnormal Temperature on Prestressed Concrete, 490
Hill, G. H., & Sons, Blithfield Reservoir, 598*
Hilmor, Ltd., Short-Radius Cold Tube-Bending Machine, 329*
Hinton, Sir C., on Atomic Energy Developments in Great Britain, 593
Hinton, K. G., on Structure of Nickel-Rich Alloys, 541
H.M. SS. See under *Warships*
Hoar, Dr. T. P., on Growth of Sulphide Films on Copper, 470
Hobbing Machines, Gear. See *Gear* under *Machine Tools*
Hodgkinson Mechanical Stokers for Boilers at Aero-Engine Factory, East Kilbride, 717*
Hoe, Petrol-Driven (Ransomes, Sims & Jefferies, Ltd.), 45*
Hoff, Prof. N. J., on Buckling and Stability in Aircraft, 371
Hoists. See *Cranes*
Holden & Hunt, Ltd., Twin-Head 16-kW Electric Rivet Heater, 291*
Holden, Dr. J., on Stretcher-Strain Markings on Metal Sheet, 439
Holland & Hannen & Cubitts, Ltd., Annfield Plain Ball-Bearing Factory, 467, 555
Holloway Brothers (London), Ltd., Caisson for Uskmouth Power Station, 552*
Holman Brothers, Ltd., Vibratory Classifier for Materials, 189*; Camborne Museum, Rostowrack Cornish Engine at, 341*, 371
Holme's Alternating-Current Electric Generator for Lighthouses, 216*
Holmes, W. C., & Co., Ltd., Generator for Inert Gas, 149*
Holton, J. E., on Practical Aspects of Engine Noise, 602
Hood, W., the Late, 693
Hooper, W. H. L., on Stretcher-Strain Markings in Aluminium Alloys, 438; on Stretcher-Strain Markings on Metal Sheet, 439
Hooper, W. T., on Cornish Engines Preservation Society, 148. See 339*, 371
Hoover, Ltd., Fractional Horse-Power Electric Motors, 353
Hope's Heating and Engineering Ltd., Mechanical Stoker with Combined Bunker and Hopper Feeds, 729*
Hopkins, B.E., on Intergranular Brittleness in Iron-Oxygen Alloys, 772; on Properties of High-Purity Iron Alloys, 773
Hornsby, R., & Sons, Ltd., Hornsby-Akroyd, 3·56-b.h.p. Oil Engine, 215*
Horsley, Smith & Co., Ltd., Storage Shed of Timber Construction, 796*
Hose, Oil Suction and Discharge of, Specification, 288
Hot-Metal Receivers for Iron Foundries (Monometer Manufacturing Co., Ltd.), 27*
— Water Accumulators for District Heating, 422, 507*
Houlton & Grant, Ltd., Storage Shed of Timber Construction, 796*
House of Commons Select Committee, Report on Technical College Education, 307
Housing and Local Government, Ministry of, Model By-Laws Series IV, Buildings, 318; Statement on Contamination of Water Supplies by Radioactive Substances, 412
Houszi, L., on Iron and Steel Industry in Netherlands, 488, 542
Hoyt, Dr. S. L., on Brittle Fracture of Steel, 187, 220. See 70
Howard, F. W. J., on Temperature Control of Molten Glass Feeder, 51
Howard Pneumatic Engineering Co., Ltd., Automatically-Controlled High-Pressure Pump, 26*
Howarth, R. M., on Ground Resonance of Helicopters, 779
Howarth, S., on Legislation and Cost of Electricity Metering, 786
Howbery Park, Berkshire, Hydraulics Research Station at, 18
Hughes, F. A., & Co., Ltd., Cathodic Protection of Buried or Submerged Structures, 287. See *Erratum*, 299
Hughes, W. C., the Late, 686
Hull, Victoria Docks, Storage Shed of Timber Construction, 796*
Humidity Control Unit (P.A.M., Ltd.), 171*
Humphrey, G., the Late, 558
Humphries, J., on Rocket Exploration of Upper Atmosphere, 360
Huncoat Power Station, Fireless Steam Locomotive For, 608*
Hunt, D. le M., on Test for Notch Ductility, 71
"Hunter" Record-Breaking Aircrafts, 338, 374*
"Hurel-Dubois 31" Air Liner, 75*
Husband & Co., Laboratories of British Iron and Steel Research Association, 683*
Hutton, D., the Late, 814
Hydraulic Engineering Co., Ltd., 200-ton Forging Press, 684*
— Machine Tools. See *Machine Tools*
— Power Plant. See *Power Plant*
— Press. See *Press* under *Machine Tools*
— Pumps. See *Pump*
— Research Laboratory for Docks and Inland Waterways Executive, 120, 138*. See LETTER, 212
— Transport of Coal, Feeder for, 296*
— Turbines. See *Turbines; Pelton Wheels; Power Plant*
Hydraulics Research Board, Annual Report, 18
— See also *Hydrodynamics; Irrigation; Water*
Hydrodynamics, Conduit with Surge Tank, Calculation of Oscillations in (Review), 517
— Flow Meters, Electromagnetic (Tobi N.V.), 542*
— Fluid-Flow Measuring Devices, Problems of, 6*, 35*. See LETTER, 244*
Hydro-Electric Power Plant. See *Power Plant*
Hydromechanics Research Association, British, Feeder for Hydraulic Transport of Coal, 296*
— — by United States Navy, 584
"Hydronic" Web Guider (Ferranti, Ltd.), 669*
"Hydrotracer" Copying Attachment, 185*
Hylo-veyor Machine and Loband Loader (C. H. Johnson (Machines), Ltd.), 822*

I.

IBBERSON, G., & CO., Bowing Operation on Pearl Scale, 91*
Ice-Cream Manufacturing Plant of T. Wall & Sons, Ltd., 502*
— See also *Refrigerating*
Ijmuiden, International Flame-Radiation Research, 555*
"Ilala," M.S., in 500-ton Floating Dock, 200*
Illumination. See *Light; Lighting;* and *Lamps* under *Electric*
Impact Tests. See *Tests (Materials)*
Imperial Chemical Industries, Ltd., Billingham and Wilton Works of, 94; Titanium Production Plant, 211; Manufacture of Blasting Explosives in India, 627; Continuous Casting Machine for Copper Ingots, 809*
Imperial College of Science and Technology, London, Lectures on Analysers and Computers for Electrical Systems, 147; Researches on Solar Energy, 409*
Import Trade. See *Trade*
Impulse Turbines. See *Turbines*
Incandescent Heat Co., Ltd., Gas-Fired Furnace for Pipe Bending and Fabrication, 313*
— Lamps. See *Lamps* under *Electric*
Incinerators at Sheffield Refuse-Disposal Plant, 633*
India Rubber. See *Rubber*
— Northern, and Pakistan, Land Reclamation in, 233
— Perkins Diesel Engines in, 787
— South, Tunnels for Machkund Hydro-Electric Scheme, 683
— Standard Locomotives in, 50 Years Ago, 801*
Indian Government, Manufacture of Blasting Explosives, 627
— Railways, Standard Locomotives, 50 Years Ago, 801*
Indication, Remote, of Measurements, System for (Salford Electrical Instruments, Ltd.), 672*
Indicator, Rudder-Angle (Smith's Industrial Instruments, Ltd.), 325*
Industrial Accidents. See *Accidents*
— Centres, Notes from 14, 46, 78, 110, 142, 174, 206, 238, 270, 302, 334, 366, 398, 430, 462, 494, 526, 558, 590, 622, 654, 686, 718, 750, 782, 814. See PARAGRAPH INDEX
— Chemistry. See *Chemistry*
Industrial Economics. See *Labour*
— Furnaces. See *Furnaces*
— Management. See *Works Management*
— Research. See *Research*
Industries, British, Federation of. See *Federation*
— Earnings of: Truth About Prices and Profits (Review), 82
— "Revolving" Fund for, 243
— See also *Trade* and PARAGRAPH INDEX
Ingots, Copper, Continuous Casting Machine for (Sheppard & Sons, Ltd.), 809*
Inland Navigation. See *Canals; Rivers*, etc.
Insignia Award of City and Guilds of London Institute, 819
Institutes. See *Institutions*
Institution, British Standards. See *Standards*
— of Production Engineers. See *Production*
— Technical and Scientific, see *Aero Club, Royal; Aeronautical Sciences, Institute of; Aeronautical Society, Royal; Agricultural Society, Royal; American Welding Society; Arts, Royal Society of; Aslib; British Aircraft Constructors, Society of; British Association; British Foundrymen, Institute of; British Waterworks Association; Cargo Handling Co-ordination Association, International; Cement and Concrete Association; Chemical Engineers, Institution of; Chemical Industry, Society of; Civil Engineers, Institution of; Cleveland Scientific and Technical Institution; Combustion Engineering Association; Consulting Engineers, Association of; Cornish Engines Preservation Society; Diesel Engine Users Association; Electrical Engineers, Institution of; Electronics, Institution of; Engineers and Shipbuilders in Scotland, Institution of; Faraday House Old Students' Association; Fuel, Institute of; General Managers, Institute of; Heating and Ventilating Engineers, Institution of; Iron and Steel Institute; Iron and Steel Institute, West of Scotland; Junior Institution of Engineers; Liverpool Engineering Society; Locomotive Engineers, Institution of; Manchester Association of Engineers; Mechanical Engineers, Institution of; Metals, Institute of; Metallurgists, Institution of* (under *Metallurgy*); *Naval Architects, Institution of; Newcomen Society; Production Engineers, Institution of; Public Lighting Engineers, Association of; Royal Society; Rugby Engineering Society; Sheet and Strip Metal Users' Technical Association; Smoke Abatement Society, National; Structural Engineers, Institution of; Supervising Electrical Engineers, Association of; Tool Engineers, American Society of; Water Engineers, Institution of;* and *Welding, Institute of*
Instruments, Measuring and Control, for Industrial Processes, Dimensional Features of, Specification, 288
— — Linear, and Comparator (Sigma Instrument Co., Ltd.), 523
— for Regulating Metered Air Supplies (Williams and James (Engineers), Ltd.), 63*
— See also *Aeronautics; Electric*
Insulation. See *Electric*
Intercommunication Equipment, Divers', 555
Intercoolers for 5,400-b.h.p. Marine Gas Turbine, 673*
Interferometer for Measuring Slip Gauges, 757*
Internal-Combustion Engines. See *Aeronautics; Engines; Motor Cars; Motor Boats; Tractors; Turbine, Gas*
International Air Salon, Paris, 19, 42*, 50, 73*
— Electrotecnical Commission, Yugoslav Meeting, 211
— Federation of Prestressing, London, Congress of. See *Prestressing, International Federation of, London Congress*
— Flame-Radiation Research at Ijmuiden, 488, 555*
International Harvester Co., of Great Britain, Ltd., Diesel-Driven Crawler Tractor, 106*
— Mechanical Engineering Congress, Turin, Programme, 63
— Motor-Car Race, Goodwood, 275
— — Show, London, Engineering Developments at, 529, 534*, 565*, 587*
— Trade. See *Trade*
— Wrought Non-Ferrous Metals Council, Formation of, 532
Inventions and Designs (Crown Use), Bill, 723
Ionospheric Observations by Radio Research Board, Report on, 241
Iraq, Cathodic Protection of Oil Pipelines in, 650
Iron Alloys. See *Metallurgy* and *Steel*
— Alpha, Fracture of, 772
— Corrosion. See *Corrosion*
— Council, Joint, Annual Dinner, 626
— Foundry. See *Foundry*
— Furnaces. See *Furnaces*
— Heat Treatment. See *Metallurgy*
— Manufacture. See *Furnaces, Blast. Metallurgy*
— Ore. See *Ore*
— Rolling Mills. See *Rolling Mills*
— and Steel Act, 1953, "Appointed Day" for, 50
— — Foundries Regulations, 1953, 499
— — Industry in Netherlands, 488, 542
— — Industries of Sheffield, 89*

Iron and Steel Institute:

Netherlands Meeting:
Programme, 111
Report of Proceedings, 488
Iron and Steel Industry in Netherlands, by I. Houszi, 488, 542
Investigation of Luminous Flame Radiation at Ijmuiden International Research Centre, by G. W. van S. Callenfels, 555*. See 488
Visits to Works, 488

Autumn General Meeting:
Programme, 575
Changes in Council, 725
Andrew Carnegie Scholarships, 725
Reports of Discussions, 725, 744, 772
Effect of Emissivity and Flame Length on Heat Transfer in Open-Hearth Furnaces, by Prof. M. W. Thring, 725. See 744
Experiments on Flame Radiation in Empty Open-Hearth Furnace, by W. P. Cashmore and Prof. M. W. Thring, 725. See 744
Length of Oil and Gas Flames, by A. L. Cude, 725. See 744
Water Cooling of Open-Hearth Furnaces, by A. M. Frankau, 772
Notched Slow-Bend Test as Brittle-Fracture Test, by Prof. J. E. de Graaf and Dr. J. H. van der Veen, 772
Fracture of Alpha Iron, by Drs. C. F. Tipper and E. O. Wade, 772
Intergranular Brittleness in Iron-Oxygen Alloys, by W. P. Rees and B. E. Hopkins, 772
Cleavage Strength of Polycrystals, by Dr. N. J. Petch, 772
Tensile and Impact Properties of High-Purity Iron-Carbon-Manganese Alloys by Dr. N. P. Allen, W. P. Rees, B. E. Hopkins and H. R. Tipler, 773

Symposium on Sinter. See Vol. 177

Iron and Steel Institute, West of Scotland:

Conference on Brittle Fracture in Steel:
Brittle Fracture Investigations in United States, by Dr. S. L. Hoyt, 187, 220. See 70
Brittle Fracture in Swedish Shipyard, by N. G. Leide, 70
Mechanism of Fracture in Impact Tests, by P. Matton-Sjöberg, 70
Effect of Production Variables on V-Notch Charpy Transition Temperature of Ship Plates, by I. M. Mackenzie, 70
Development of Robertson Test for Notch Ductility, by T. S. Robertson and D. le M. Hunt, 71
Notch Bend Tests, by Prof. W. Soete, 71
Effects of Dimensions in Testing, by Dr. C. F. Tipper, 71
Influence of Welding on Notch-Brittle Fracture, by Dr. A. A. Wells, 71
Iron and Steel, Manufacture of (Review), 740
— — Productivity Team, British, Views on Milling of Rail Ends, 299
— — Research Association, British, North-East Coast Laboratories, 116*; Sheffield Laboratories, 683*
— — Works. See *Works*
— — See also PARAGRAPH INDEX
— Tests. See *Tests (Materials)*
— Welding. See *Welding*
— See also *Cast Iron; Steel; Metallurgy*
Ironwork, Structural. See *Bridges; Columns; Roofs; Structures*
Irrigation Projects in United States, Sediment Problems, 1*
— See also PARAGRAPH INDEX
Isle of Skye, Diatomite Industry in, 444
Isodynamometer for Tests of Celluloid Model Structures, 517, 665*
Isopad, Ltd., Electric Surface Heater for Sulphonating Pot, 294*; Electric Surface Heater for Drums, 294*
Isotopes Containers (Solus-Schall, Ltd.), 293
Italy, Electricity Supply Developments in, 268*
— Tubular Transmission-Line Tower in, 678*. See LETTER, 787

J.

JACK, Hydraulic Positioning (Tangyes, Ltd.), 128*
Jacking Unit for Prestressing Concrete (Cable Covers, Ltd.), 606*
Jackson, Dr. T. A. S., on Webb's Approximation of Secθ, 298
Jacob, I., on Smoke from Domestic Fires and Industrial Furnaces, 497
Jaeger, Prof. H. E., on The Netherlands, 403
Jane's Fighting Ships, 1953-54 (Review), 740
Jansky, J. G., Discovery of Radio Waves from Stars, 316
Jarvis, J., & Sons, Ltd., Hemel Hempstead Factory of Rotax, Ltd., 617*
Jaw Crushers, Performance of, 456*, 485
Jessop, W., & Sons, Ltd., Turbine Wheels for Jet Engines, 91*
Johnson, Dr. A. E., on Equipment for Compression-Creep Tests, 28*
Johnson, C. H. (Machines), Ltd., Hylo-veyor and Loband Loader, 822*
Joint Iron Council, Annual Dinner, 626
Jones, C. H., on Ground Resonance of Helicopters, 779
Journals. See *Bearings*
Jowett "Jupiter" Motor Car, 565*
Jubilee of Foster Transformers, Ltd., 471*
— of Letchworth Garden City, 307
— of Officers (Merchant Navy) Federation, 402
— of Parsons Chain Co., Ltd., 563
— of Rugby Engineering Society, 532
— of Stewarts and Lloyds, Ltd., 312
— of Wright Brothers, British Celebration, 818, 823. See 737*, 753. See *Errata*, 791
Judd, S. R., on Arc Suppression on Mercury-Arc Rectifiers, 100*
Jugoslavia. See *Yugoslavia*
Julia River, Zürich Hydro-Electric Stations on, 129*
Junior Institution of Engineers, Presidential Address by Sir J. Hacking on Developments and Future Possibilities of Electricity Generation, 827. See 818
"Jupiter" Jowett Motor Car, 565*

K.

KAMEL PRODUCTS, LTD., Waste-Oil Firing Unit, 640*
Keith, Blackman, Ltd., Portable Fume Extractor, 290*; Axial Fan with External Motor, 395*
Kellett, W., the Late, 46
Kelley, Dr. G. L., the Late, 244
Kelvin & Hughes (Industrial), Ltd., Ultrasonic Equipment for Examination of Welds, 211
Kelvin & Hughes (Marine), Ltd., Long-Range Radar Equipment, 236*
Kent, G., Ltd., Differential Draught Gauge, 384*; Mercurial Flow Meters, 702
Kenton Laboratories, Ltd., Divers' Intercommunication Equipment, 555
Kenyon, W., & Sons, Ltd., Diatomite Industry in Isle of Skye, 444
Kerr, H. L., on Road Construction in Urban Areas, 681
Kiln, Circular, Electrically-Operated, for Brick Making (Clarks Kilns (N.S.W.), Pty., Ltd.), 825*
Kilner, Major Sir J., the Late, 212*
Kinematics of Mechanisms (Review), 613
King George VI Memorial Fellowships, 435
King, G. W., Ltd., "P.C.P." Overhead Conveyor Kit, 800*
King's College, Newcastle-upon-Tyne, Appeal for, 306, 558
Kirkby Factory of Tubewrights, Ltd., 617*
Kirkendall Effect and Diffusion, 470
Kiruna Iron-Ore Mine, Wagon Drill for, 642*

Kitchen & Wade, Ltd., Drilling Machine for Armature Yokes, 190*
Kitty Hawk, North Carolina, Wright Brothers' Flights at, 737*, 753. See *Errata*, 791. See 818, 823
Knight, B. E., on Problems of Fluid-Flow Measuring Devices, 244*. See 6*, 35*
Knitting Machine, Wire, Circular, 117*
Knock in Petrol Engines, Research on, 39*
Krietemeijer, J. H., on Optical Marking-Off System for Shipbuilding, 570*. See 486
Krupnik, N., on Stepped Stress-Strain Curve of Aluminium Alloys, 438
Kuhlmann, F., K.G., Perspective Draughting Machine, 202*
K.W. Chemicals, Ltd., Portable Oxygen Generator, 704*
Kymatograph for Model of Table Bay Harbour, 247*, 267*

L.

LABORATORY, Chemical Research, Annual Report, 428, 434; Investigation on New Sources of Selenium, 569
— Disintegrator (G. Scott & Son (London), Ltd.), 832*
— Fluids Mechanics and Combustion Research, of Brown, Boveri & Co., Ltd., 600*
— Mechanical Engineering Research, Equipment for Compression-Creep Tests at High Temperatures, by Dr. A. E. Johnson and N. E. Frost, 28*; Annual Report on Work of, 209
— New, of British Coal Utilisation Research Association, 20
— Nuclear-Particle, Queen Mary College, London, Opening of, 91
— Research, Aircraft (Handley Page, Ltd.), 150*
— — Hydraulic, for Docks and Inland Waterways Executive, 120, 138*. See LETTER, 212
— — Industrial, Birmingham, Tests of Wire-Rope Grips, 734*
— Road Research, Experimental Stone-Crushing Plant, 281*; Surface Dressings for Protecting Soil Formations, by W. A. Lewis, 793*
— Sheffield, of British Iron and Steel Research Association, 683*
— Testing, Leatherhead, for Domestic Electrical Appliances, 489*
— See also *National Physical*

Labour:

Craftsmanship, Training in, 531, 533
Employers, Statutory Duty of, 179
Industrial Accidents. See *Accidents*
Labour Distribution in Sheffield Industries, 89*
— in Mines and Quarries, 659
— and National Service, Ministry of, Iron and Steel Foundries Regulations, 1953, 499; Report on Employment of Older Men and Women, 563
— Notes, 24, 56, 88, 120, 152, 184, 216, 248, 280, 312, 344, 376, 408, 440, 472 504, 536, 568, 600, 632, 664, 696, 728, 760, 792, 824. See PARAGRAPH INDEX
— and Profit Motive, Truth on Earnings of Industry, 82
Locomotive Drivers and Firemen, Duties of, 433
Men and Women, Older, Report on Employment of, 563
National Coal Board, Apprentice Training Scheme, 627
— Dock Labour Board, Annual Report, 114
Railwaymen Dispute over Wages, 787
Lackenby Steelworks of Dorman, Long & Co., Ltd., Opening of, 453
Ladder, Inspection, for Railway-Station Roofs (Merryweather & Sons, Ltd.), 118*
Laing, J., & Son, Ltd., Bala Lake Improvement Scheme, 412
Lakes, Stratification and "Overturn" in, 821
Lamb, J., Turbo-Electric, Oil Tanker "Helix," 619*
Lamont, P., on Age and Carrying Capacity of Pipelines, 821
La Mont Steam Generator, Ltd., Boilers for Tank Factory, Leyland, 631*
Lamps, Electric. See *Electric*
— for Public Lighting, 370
Lancashire Dynamo & Crypto Co., Ltd., Electric Motor for Bascule Bridge, Aberdeen, 482*
— and S. Yorkshire, Notes from, 14, 46, 78, 110, 142, 174, 206, 238, 270, 302, 334, 366, 398, 430, 462, 494, 526, 558, 590, 622, 654, 686, 718, 750, 782, 814. See PARAGRAPH INDEX
Lancaster-Morecambe-Heysham Railway, 50-Cycle Single-Phase Electrification, 459*
"Lancia Appia" Motor Car, 565*
"Lancia Aurelia" Motor-Car Rear Drive and Suspension, 565*
Land Reclamation in Netherlands, 403
— — in Northern India and Pakistan, 233
Landish Co. Aircraft Propeller-Blade Forging of Titanium Alloy, 373*
Lane, E. W., on Sediment Problems on Irrigation Projects in United States, 1*
Lansing Bagnall, Ltd., 42-b.h.p. Diesel-Engined Industrial Tractor, 160*; Battery-Operated Fork-Lift Truck, 203*
Lantern, Street Lighting, Design and Manufacture of, 370
Lardner, E., on Intracrystalline Voids in Magnesium-Aluminium Alloys, 470
Lathes. See *Machine Tools*
Launch, Motor. See *Motor Boat*
— and Trial Trips of Ships, 15, 47, 79, 111, 159, 187, 207, 248, 303, 335, 472, 540, 601, 670, 732, 799, 826
Launching Greases, Tests of, 468
Lavender, Dr. J. G., on Investigation of Pressure Rise in Spark-Ignition Engines, 135*
Law. See *Legal; Labour*
Laws, P. H., on Preservation of Old Engines, 500*. See LETTER, 371
Laycock de-Normanville Motor Car, 587*
Leak Detection by Radioactive Materials, 157
Leatherhead Testing Laboratory for Domestic Electrical Appliances, 489*
— and Wimbledon Factories of Foster Transformers, Ltd., 471*
Ledward, H., the Late, 781
Lee, A., & Sons, Ltd., Sendzimir Rolling Mill for Strip, 91*
Leeds Corporation, Single-Deck High-Speed Tramcars, 124*, 254*. See *Erratum*, 199

Legal:

By-Laws, Model, for Buildings, 318
Cummings versus R. Thomas & Baldwins, Ltd., Decision in, 99. See LETTER, 179
Fencing of Dangerous Machinery, Legal Decisions on, 615
Inventions and Designs (Crown Use), Bill, 723
Iron and Steel Act, 1953, "Appointed Day" for, 50
— — Foundries Regulations, 1953, 499
Legislation and Costs of Electricity Metering, 786
— on Smoke Abatement, 787
Machinery, Moving, Lawsuit on Injury from, 99. See LETTER, 179
Pugh versus Manchester Dry Dock Co., Decision on, 691
Rees versus B. Hastie & Co., Ltd., Decision on, 179
Statutory Duty of Employers, 179
Transport Act and Decentralisation of British Railways, 20. See LETTER, 84
See also PARAGRAPH INDEX
Legislation and Costs of Electricity Metering, 786
— See *Legal; Labour*
Leicestershire, Sapcote Junction, Experiments on Surface Dressings for Soil Road, 793
Leide, N. G., on Brittle Fracture in Steel Plate, 70
le Maistre, C., the Late, 84
Lemington Glass Works of General Electric Co., Ltd., 94
Lenses, Photographic, Resolving Power of, Method for Determining (Review), 581
Letchworth Garden City, Jubilee of, 307
Letters to the Editor, 20, 51, 84, 147, 179, 212, 244*, 276*, 338, 371, 436*, 500*, 532, 692, 723, 756*, 787, 819
Level, "Aqualev" (Austin & Trimingham), 205
— Boiler-Water, Television Receiver (Bailey Meters & Controls, Ltd.), 392*
Lewis, D. H., on Economic Aspects of Corrosion Control, 650
Lewis, W. A., on Surface Dressings for Protecting Soil Formations, 793*
Leyland Motors, Ltd., Epicyclic Gearbox without Clutch Pedal, 694*
— Tank Factory 630*
Libraries, Special, and Information Bureaux, Association of. See *Aslib*
Lifeboat, Aluminium-Alloy, with 10-h.p. Petter Diesel Engine (Norsk Flyindustri A/S), 829*
— and Inflatable Rafts for Ships, 458, 465. See LETTER, 532
Life Saving Equipment for Ships, 458, 465. See LETTER, 532
Lifts, Installation of, in Research Building of C. A. Parsons & Co., Ltd. (J. & E. Hall, Ltd.), 715
— Overside, Electrically-Operated, Oil Tanker "Helix," 621*
Lifting Bridges. See *Bridges*
Light Alloys. See *Alloys* under *Metallurgy*
— Navigation, for "Ambrose" Lightship (Chance Brothers, Ltd.), 234*
— Polarised, Stress Determination by. See *Photo-Elastic*
Lightfoot Refrigeration Co., Ltd., Refrigerating Plant at Ice-Cream Factory of T. Wall & Sons, Ltd., 502*
Lighthouse Apparatus, Chance Brothers, Ltd.,
Lighting, Fluorescent, for Stockwell Omnibus Garage, 703*
— Recent Developments in Fluorescent-Tube Manufacture, 388*
— Street, Practice of, 370
— System of Design and Research Building of C. A. Parsons & Co., Ltd., 714*
— See also *Lamps* under *Electric*
Lightning. See *Electric*
Lightship "Ambrose," Navigation Light for (Chance Brothers, Ltd.), 234*
Limits and Fits, New British Standard System, of, 817
— Gauges. See *Gauges*
Lindley High-Speed Test Track for Motor Vehicles, 747
Liners. See *Ships; Steamers; Motorships*
Linings, Friction, Bonded Process for (T. Broadbent & Sons, Ltd.), 583
Liquid Fuel. See *Oil Fuel*. See also *Motor; Paraffin; Petrol*
— Viscosity of. See *Viscosity*
List, Prof. H., Design of Two-Stroke Oil Engine for Automobiles, 385*, 419*. See *Erratum* 519
Literature, 4, 99, 134, 165, 195, 227, 387, 418, 453, 484, 516, 546, 581, 613, 644, 676, 706, 740, 771, 803. See LITERATURE INDEX
Litigation. See *Legal*
Liverpool Engineering Society, Presidential Address by V. L. Farthing, on Research and Production in Engineering, 594
— Royal Liver Building, Electronic Chiming Installation for Clock, 664
— University, Webb's Approximation of Sec θ, by Dr. T. A. S. Jackson, L. Rosenhead and T. Murphy, 298
Livesey & Henderson, 500-ton Floating Dock on Lake Nyasa, 200*
Livesley, R. K., on Analysis of Rigid Frames by Electronic Digital Computer, 230*, 277*; on Utilisation of Electronic Computers in Engineering Practice, 349. See 344
Lloyd's Register of Shipping, Statistics of Vessels under Construction, 137, 562; Investigations on Hull and Machinery Defects, 626
Load Diffusion in Bridge-Deck Systems, 645*
Loader, Crop, Elevating (Bamfords, Ltd.), 44*
— and Gang Mower (E. S. Walley & Co., Ltd.), 106*
— Loband and Hylo-veyor Machine (C. H. Johnson (Machines), Ltd.), 822*
— Mine (Atlas Diesel Co.), 643*
— and Stacker, Dual-Purpose (Steel Fabricators (Cardiff), Ltd.), 812*
— Tractor-Operated (J. C. Bamford), 105*
Loading and Stockpiling Equipment, Birkenhead Gasworks, 822*
Loband Loader for Gasworks, 822*
Loch Cuithir, Isle of Skye, Diatomite Deposits in, 444
Locomotive Building Programme, British Railways, 51
— Diesel-Electric, 1,750-h.p., British Railways, Tests of, 305
— — Electric, 1,000-h.p., for New South Wales Government Railways, 139*. See *Addendum*, 212
— — Electric, 1,500-h.p., for Queensland Government Railways, 172*
— — Electric, 1,500-h.p., Set for (English Electric Co., Ltd.), 354*
— — Electric, 1,600-h.p., Variable-Gauge, 233*
— — Hydraulic 625-h.p., North British Locomotive Co., Ltd.), 651*
— Driving and Footplate Philosophy, 433
— Electric, Mining, 62-h.p. (Metropolitan-Vickers Electrical Co., Ltd.), 279*
— — 2,958-h.p., for Netherlands Railways (Baldwin Locomotive Works and Westinghouse Electric & Manufacturing Co.), 65*
— — 6,000-h.p., Riding Control for Bogie of Swiss Federal Railways, 285*
— Engineers, Institution of, Award of Gold Medal to R. A. Riddles, 51; Presidential Address by R. C. Bond on Motive Power on British Railways, 439
— Mining, Use of, 242
— Shunting, Industrial (Yorkshire Engine Co., Ltd.), 59*
— Standard, in India, 50 Years Ago, 801*
— — 2-6-2 Tank, British Railways, 348*
— Steam, in America (Review), 273
— — for British Railways, Survey of, 439
— — Fireless (W. G. Bagnall, Ltd.), 608*
— — 4-6-2 Mixed-Traffic, British Railways, Tests of, 305
— See also *Railways* in PARAGRAPH INDEX
Logging Arch for Forestry (D. Brown Tractors (Engineering), Ltd.), 826*
London Airport, Acoustic Wall at, 201*
— — Developments of, 397*
London Aluminium Co., Ltd., Bulk-Cement Transporter, 109*
— Conference on Commonwealth Cable Standards, 190
— Congress of International Federation of Prestressing. See *Prestressing, International Federation of, London Congress*
— Contractors' Accident Prevention Group, A Contractors' Safety Organisation, by W. Dawes, 402
— County Council, Coronation Reception by, 51; Scheme for Development of South Bank of River Thames, 532; Committee on Air Pollution in London, 659
— District Heating in, 422, 473*, 507*
— Docks, History and Features of, 637
— Fog of December, 1952, Effects of, 497
— Imperial College of Science and Technology, Researches on Solar Energy, 409*
— Queen Mary College, Opening of Nuclear-Particle Laboratory, 91; Investigation of Pressure Rise in Spark-Ignition Engines, 135*
— Transport Executive, Ultrasonic Flaw Detector for Rails, 11*. See *Addendum*, 412; Surrey Docks Substation, 437*; One-Man Operated Omnibus, 607; Stockwell Garage, 703*; Escalator, "Water-Fog" Equipment for, 822; Rubber Suspension of Railway Bogies, 830*
— Underground Railways. See *Underground* and *London Transport Executive*
Longden, G., & Son, Ltd., Sheffield Refuse-Disposal Plant, 633*; Laboratories of British Iron and Steel Research Association, 683*
Lord, J. H., on Rubber Manufacturing Industry, 692
Lorries. See *Motor Vehicles; Tractors*
Loudspeaker Systems, Trends in Design of, 760
Loughborough Switchgear Factory, Brush Electrical Engineering Co., Ltd., 569*
Lovatt Wilson & Sons, Ltd., Stockwell Omnibus Garage, 703*
Low Loading Trailer Co., Ltd., 7-ton Short-Haul Trailer, 812*
Lubricant Testing (Review), 165
Lubricating Oils. See also *Oils*
Lubrication of Gears, 627, 632. See LETTER, 692
Lubricator, Grease, Single-Line (Trier Brothers, Ltd.), 296*
Lucas, J. C., on Use of Electrical Resistance Strain Gauges on Concrete Structures, 487
Luminescence and Scintillation Counter (Review), 644
Lybia, Sabratha, Roman City, "Concrete" from, 756*
Lynemouth Colliery, 1,225-h.p. Automatic Alternating-current Winding Machine, 774*
Lyon, A., & Co. (Engineers), Ltd., Combined Electric Generator and Pumping Set, 790*
Lyttelton Harbour, New Zealand, Investigations by Hydraulics Research Board, 18

M.

MACADAM. See *Roads* and *Tar*
Machine Shops. See *Works* and *Machine Tools*
— Testing. See *Testing Machine* and *Tests (Materials)*

Machine Tools:

Automatic, Six-Spindle, for 1-in. Bars (Wickman, Ltd.), 249*
Bending Machine, Tube, Short-Radius Cold (Hilmor, Ltd.), 329*
Boring Bars, Tool Sleeves for (W. H. Marley & Co., Ltd.), 286*
— Machine, Vertical, at Tank Factory, Leyland (C. Berthiez), 631*
— Mill, Large Universal (British Thomson-Houston Co., Ltd.), 449*
— and Milling Machines for Machining Turbine Casings (W. Asquith, Ltd.), 97*
Broach-Sharpening Machine (Coventry Gauge & Tool Co., Ltd.), 428*
Chucks for Lathes and Drilling Machines, Accuracy of, Specification, 111
Clamping Equipment, Pneumatic (Baldwin Instrument Co., Ltd.), 327*
Copying Attachment, Hydraulic, for Machine Tools (Hayes Engineers (Leeds), Ltd.), 185*
Cropping Machine, Hydraulic (Pilot Works, Ltd.), 263*
Cutters, Gear-Shaving, Circular, Accuracy of, Specification, 367
Cutting Tools, Oil Cooling of, Research on, 690
Diehead, Thread-Rolling (A. Herbert, Ltd.), 683*
Drill, Pneumatic ¼-in. (Desoutter Brothers, Ltd.), 294*
— — Corner (Desoutter Brothers, Ltd.), 294*
— — Rock, Manufacture by Atlas Diesel Co., Sweden, 641*
— Set, Pneumatic (Consolidated Pneumatic Tool Co., Ltd.), 326*
Drilling Machine with Air-Hydraulic Feed Unit, W. J. Meddings, Ltd.), 260*
— — for Armature Yokes (Kitchen & Wade, Ltd.), 190*
— — Chucks for, Accuracy of, Specification, 111
— — Mining, 5-h.p. Electric (Hardypick, Ltd., and United Steel Companies, Ltd.), 58*
— — Radial, Experiments on Vibrations of, 707*
Gear-Hobbing Machine, 100-in., for Turbine Gears (D. Brown Machine Tools, Ltd.), 203*
— Shaving Cutters, Circular, Accuracy of, Specification, 367
Grinding Machine, Centreless (B.S.A. Tools, Ltd.), 476*
— — Die (Morgan Fairest, Ltd.), 58*
— — Electric, Portable (Wolf Electric Tools, Ltd.), 575*
— — Strip, at Shepcote Lane Works, Sheffield, 365*
— — Surface (Bourdon Tools, Ltd.), 511*
— — Surface, Heavy-Duty Precision (Snow & Co., Ltd.), 58*
— Wheel, Accident with, Legal Decision on, 691
Hacksaw Manufacture in Sheffield, 57*
Hinge-Wiring Machine for Tin-Box Making Machinery (F. J. Edwards, Ltd.), 460*
Hobbing Machine, 100-in. for Turbine Gears (D. Brown Machine Tools, Ltd.), 203*
Hydraulic Press. See *Press* (below)
Lathe, 1-in. Capstan (Murad Developments, Ltd.), 292*
— Chucks for, Accuracy of, Specification, 111
— Copying, with Electromagnetic Tool Control (Heid Machine Building Corporation), 778*
— — Hydraulic, Attachment for (GEMA Betriebsgesellschaft m.b.H.), 235*
— Corrector, Screw-Thread, Precision (Craven Brothers (Manchester), Ltd.), 524*
— See also *Automatic* (above)
Limit Gauging. See *Gauges*
Machine-Shop Management. See *Works Management*
— Tools at Ball Bearing Factory of Ransome & Marles Bearing Co., Ltd., 467, 555
— — at Earlsfield Diesel-Engine Works of F. Perkins, Ltd., 12*
— — Hydraulic Copying Attachment for (Hayes Engineers (Leeds), Ltd.), 185*
— — Industry, Productivity Teams' Report, 10
— — for Machining Turbine Casings (British Thomson-Houston Co., Ltd.), 97*
— — for Manufacture of Aerofoil Models, 218*
— — for Seamless Tube Manufacture, 164*, 193*, 225*
— — Structures, Vibrations of, Experiments on, 707*
— — Trades Association, Statement on Report of British Metalworking Machine-Tool Productivity Team, 10
— Work, Tolerances in. See *Gauges*
Milling and Boring Machines for Machining Turbine Casings (W. Asquith, Ltd.), 97*
— Machine, Heavy Duty (Victoria Machine Tool Co., Ltd.), 25*
— — Optical Follower for (Salisbury Precision Engineering, Ltd.), 425*
Mortising Machine, Chain, for Wood (F. J. Edwards, Ltd.), 284*
Planing Machine, 24-in. Panel (Wadkin Ltd.), 653*

Machine Tools—*continued.*
Pneumatic Drills. See *Drills* (above)
Press, Brake, 30-ton (Bronx Engineering Co., Ltd.), 265*
— Forging, Hydraulic (G. Cohen, Sons & Co., Ltd.), 683*
— 40-ton Geared, Inclinable (F. J. Edwards, Ltd.), 256*
— Hydraulic, Butting, for Seamless Tube Manufacture, 193*
— — 6,000-ton Wheel-Forging (Davy & United Engineering Co., Ltd.), 59*
— 50-ton, with Pneumatic-Hydraulic Accumulator (Finney Presses, Ltd.), 291*. See *Erratum*, 361
— Power, 100-ton, with Press-Brake Attachment (H. Raskin Works), 124*
— Slide, Dual Operation, for Tin-Box Making Machinery (F. J. Edwards, Ltd.), 460*
Reduction Machine, Cold, for Seamless-Tube Manufacture (Maschinenfabrik Meer A.G.), 162*
Rolls, Blade-Forging (Morgan Fairest, Ltd.), 58*
Sanding Machine, Double-Disc, Dust Collector for (Dallow, Lambert & Co., Ltd.), 328*
Saw, Band, Tensioning of (Sanderson Brothers & Newbould, Ltd.), 57*
— Circular, Logging, Tractor-Operated (F. W. McConnell, Ltd.), 105*
— Sharpening and Gulleting Machine (F. J. Edwards, Ltd.), 284*
— See also *Hacksaws* (above)
Sawing Machine, Cold, Electrically-Driven (Voucher, Ltd.), 61
Sawmill, Mobile, 776*
Shaving Machine for 220-in. Gears (D. Brown Machine Tools, Ltd.), 730*
Shearing Machine, Strip, at Shepcote Lane Works, Sheffield, 365*. See LETTER, 436*
Swaging Machine for Tagging Small Tubes, 226*
Tenoning Machine, Double-Ended (Wadkin, Ltd.), 653*
Thread-Rolling Diehead (A. Herbert, Ltd.), 683*
Tool-Holding Sleeve for Boring Bars (W. H. Marley & Co., Ltd.), 286*
— Pneumatic, Manufacture by Atlas Diesel Co., Sweden, 643
— — Swedish, Production of, 499
Trimming Machines for Tin-Box Making Machinery (F. J. Edwards, Ltd.), 460*
Truing Tools, Diamond, Dimensions of, Specification, 254
Tube, Seamless, Cold-Reduction Machine for (Maschinenfabrik Meer A.G.), 162*
Turning and Boring Mills. See *Boring* (above)
— Machines, Automatic. See *Automatic* (above)
— — Crankpin, Vertical (A. Shardlow & Co., Ltd.), 59*
Woodworking Machinery, Chain Mortiser (F. J. Edwards, Ltd.), 284*
— — Mobile Sawmill, 776*
— — Planing Machine, 24-in. Panel (Wadkin, Ltd.), 653*
— — Saw-Sharpening and Gulleting Machine (F. J. Edwards, Ltd.), 284*
— — Tenoning Machine (Wadkin, Ltd.), 653*
See also PARAGRAPH INDEX
Machine Work. See *Machine Tools*
Machinery, Dangerous, Duty to Fence, 615
— Moving, Lawsuit on Injury from, 99. See LETTER, 179
Machkund Hydro-Electric Scheme, South India, Tunnels for, 683
Mackay Industrial Equipment, Ltd., Crawler Tractor with Angle Dozer for Coal Compacting, 727*
Mackenzie, I. M., on Notch Ductility of Ship Plates, 70
Maclean, D. J., on Soil-Cement for Road Construction, 681
Mac. See also *Mc*
"Magister" Twin-Jet Training Aircraft, 42*
Magnel, Prof. G., on Ultimate Load Design of Prestressed Concrete, 490
Magnesium Alloys. See *Alloys* under *Metallurgy*
— Anodes for Cathodic Protection, 650
Magnet, Permanent (Edgar Allen & Co., Ltd.), 91*
— — Crack Detector (Metropolitan-Vickers Electrical Co., Ltd.), 5*
Magnetic "Floater" for Separating Ferrous Sheets (J. Neill & Co. (Sheffield), Ltd.), 58*
— Tape Recording Equipment for British Broadcasting Corporation, 381
— Materials, Combined Magnetisation of, 517, 697*, 731
— Work of W. Gilbert (or Gilberd), 755. See LETTER, 819
— — at Royal Observatories, 126
Magnetisation, Combined, of Magnetic Materials, 517, 697*, 731
"Maillé Brézé," French Destroyer, Salvage Work on Wreck of, 608
Mains, Electric. See *Cables* under *Electric*
— Gas, Cathodic Protection of, 650
— Water, Carrying Capacity of, Reduction with Age, 821
Mainstone, R. J., on Vibrating-Wire Strain Gauge for Tests on Structures, 153*
Maintenance Grader, 42-b.h.p. Diesel-Engined (Aveling-Barford, Ltd.), 668*
Major Electric Furnaces Pty. Ltd., 180-kW and 275-kW Hot-Galvanising Baths, 638*
Maley & Taunton, Ltd., Bogie for Single-Deck High-Speed Tramcars, 124*. See 254*. See *Erratum*, 199
Mallagh, J., & Son, Prestressed-Concrete Grain Silo at Dublin, 577*
Mallagh, T. J. S., on Prestressed-Concrete Grain Silo at Dublin, 577*
Malone, C. A, the Late, 526
Mamhilad, Monmouthshire, Experiments on Dressings for Soil Road at, 793
M.A.N. 35-b.h.p. Single-Cylinder Diesel Engine, 216*
Management of Works. See *Works Management*
Managers, General, Institute of, objects, 755
Manchester Association of Engineers, Presidential Address by Prof. H. W. Baker on Industry and Technical Education, 467
Manchester Dry Dock Co. versus Pugh, Legal Decision on, 691
— Electronic Equipment and Apparatus, Exhibition, 19, 183
— Fuel Efficiency Exhibition and Conference, 691
— University, Stress Analysis by Electronic Digital Computer, 230*, 277*; Electronic Computing Machine of, 343, 349
Manometer, Wave, for Model of Table Bay Harbour, 245*, 267*
Manufacture, Scientific Methods in. See *Works Management*
Marconi's Wireless Telegraph Co., Ltd., Marconi-Siebe-Gorman Underwater Television Camera, 358*
Margolis, A. E., on District Heating, 473* 507*. See 422
Marine Auxiliary Machinery, Auxiliary Set (Coventry Victor Motor Co., Ltd.), 327*
— — Machinery, 200-kW Diesel-Driven Generator (British Polar Engines, Ltd.), 391*
— — Machinery, 70-kW Diesel-Driven Generator (J. & H. McLaren, Ltd.), 323*
— — Machinery, 208-kW Diesel-Driven Generator (National Gas & Oil Engine Co., Ltd.), 323*
— — Machinery, M.S. "Pavia," 92
— — Machinery, M.S. "Samos," 217
— — Machinery, Self-Contained Cargo Winch (Clarke Chapman & Co., Ltd.), 354*
— — Machinery, Turbo-Electric Oil Tanker "Helix," 620*
— — Machinery, S.S. "Vigilant," 158
— Boilers. See *Boilers*
— Engines. See *Engines ; Turbines ; Marine Propulsion*
Marine Engineering Co. (Stockport), Ltd., Fitted Clutch Drive for Electric Motors, 183*
— — and Welding Exhibition, Olympia, 11, 21, 237*, 257*, 289*. See *Erratum*, 361, 321*. 353*, 391*
— Propulsion, 8,700-b.h.p. Burmeister & Wain Diesel Engine, M.S. "Samos," 217*
— — 32 5-b.h.p. Diesel Engine (D. Brown Tractors, Ltd.), 327*
— — 440-a.h.p. Diesel Engine (H. Widdup & Co., Ltd.), 321*
— — 180-b.h.p. Diesel Engines for Motor Launch for Royal Ceylon Navy, 301*
— — Four-Cylinder Doxford Diesel Engine, M.S. "Pavia," 92*
— — 5,400-b.h.p. Gas Turbine, H.M.S. "Grey Goose," 673*
— — 144-b.h.p. Gleniffer Diesel-Engined Motor Yacht "Morag Mhor," 182
— — Machinery Defects, Investigations on, 628
— — Machinery for Motor Whale Catcher "Setter IX," Model of (National Gas & Oil Co., Ltd.), 357*
— — Model of 8,250-s.h.p. Geared-Turbine (Pametrada), 297
— — Oil Fuel for. See *Oil Fuel*
— — 3,500-h.p. Pametrada Marine Gas Turbine, 491*
— — 670-b.h.p. Six-Cylinder Diesel Engine (Crossley Brothers, Ltd.), 289*
— — 1,450-i.h.p. Triple-Expansion Engines, S.S. "Vigilant," 158
— — 300-h.p. Twelve-Cylinder Oil Engine (Fodens, Ltd.), 289*
— — 8,300-s.h.p. Turbo-Electric Machinery, Oil Tanker "Helix," 619
— — See also *Engines ; Turbines ; Propellers;* and PARAGRAPH INDEX *Propellers ; Ship Resistance ; Torsionmeters ;* and PARAGRAPH INDEX
— Salvage. See *Salvage*
— Turbines. See *Turbines, Steam ; Marine Propulsion*
Markets. See *Trade* and PARAGRAPH INDEX
Markham & Co., Ltd., 3,800-h.p. Colliery Winding Machine, 59* ; Large Universal Boring Machine, 449*
Markland, E., on Compressible Flow Through Venturi Meter, 147
Marley, W. H., & Co., Ltd., Tool Sleeves for Boring Bars, 286*
Marmorera Dam on Julia River, Zürich, 132*
Marriner, R. S., on Manufacture and Inspection of Aerofoil Models, 218*
Marrs, D. B., the Late, 366
Marsh, A., on Smokeless Zones in Industrial Cities, 83 ; on Air Pollution and the Law, 787
Marshall Richards Machine Co., Ltd., Wire-drawing Machine, 684*
Marshall, Sons & Co., Ltd., Tractor-Hauled Combined Harvester, 810*
Martin Baker Aircraft Co., Ltd., Lightweight Ejector Seat for Aircraft, 585
Maschinenfabrik Meer A.G., Cold-Reduction Machine for Seamless Tube Manufacture, 162*
Massachusetts Institute of Technology, Experiments in Nuclear Reaction, 275
Mast, Aluminium-Alloy, Portable, for Radio-Transmission Surveys (Standard Telecommunications Laboratories, Ltd.), 127*
"Master" Drafting Machine, 30
Materials, Engineering, Technology of (Review), 357
— Handling Equipment and Methods in United States, Report, 369
— High-Temperature, Properties of, 455, 505*, 537*
— Ministry of, Plant for Titanium Production, 211
— Policy Commission of United States, Report of, 381
Materials, Raw, Information on Conservation of, 20
— Strength of. See *Stress* and *Tests (Materials)*
Mathematics, Advanced, in Physics and Engineering (Review), 613
— Foundations of, Introduction to (Review), 644
— Relaxation Methods : A Retrospect, 691
— and Science, Graduate Teachers of, Report, 754
Matthew, Prof. R. H., on Form and Function in Architecture and Engineering, 722
Matthews, R. H., the Late, 238
Matton-Sjöberg, P., on Mechanisms in Fracture in Impact Tests, 70
Mauritius Railways, 625-h.p. Diesel-Hydraulic Locomotives, 651*
Mavitta Drafting Machines, Ltd., Drafting Machine, 30*
Maxim Engineering, Ltd., Petrol-Driven Portable Air Compressor, 791* ; General-Purpose Trailer, 813*
Mayson, G. F., on Duty to Fence Dangerous Machinery, 615
McBrearty, J. F., on Structures for High-Speed Aircraft, 423
McConnel, F. W., Ltd., Power Arm for Agricultural Tractor, 105*
McGraw, C., the Late, 372
McGregor, J., the Late, 21
McGruer & Co., Ltd., Diesel-Driven Admiralty Motor Barge, 170
McLaren, J. & H., Ltd., 70-kW Diesel-Driven Generator, 323*
McLean, F. C., on Application of Colour to Television Broadcasting, 441*. See 389
McPheat, J., on Estimation of Dissolved Oxygen in De-Aerated Water, 103
Mc. See also *Mac*
Meadi, Cairo, Shuman-Boys Solar Boiler at, 380*
Measurements, Remote Indication of, System for (Salford Electrical Instruments, Ltd.), 672*
Measuring Devices, Fluid-Flow, Problems of, 6*, 35*. See LETTER, 244*
— Instruments, Linear and Comparator (Sigma Instrument Co., Ltd.), 523
— — Precision (J. Chesterman & Co., Ltd.), 58*
— Machine for Load and Deformation of Rubber, 196*

Mechanical Engineers, Institution of :
Clayton and Manville Awards, 243
Summer Meeting, Sheffield :
Reports of Proceedings, 50
Engineering Industries of Sheffield, by M. A. Fiennes, 57*. See 50. See *Erratum*, 240
Metallurgical Industries of Sheffield, by by Dr. C. Sykes, 89*. See 50
London Meetings, Winter Session:
Annual Dinner, 531
Presidential Address by A. Roebuck on Training of Mechanical Engineers and Craftsmen, 533. See 531
Hawksley Lecture on Relaxation Methods: A Retrospect, by Sir R. Southwell, 601
New British Standard System of Limits and Fits, by H. G. Conway, 817
Practical Application of New British Standard System of Limits and Fits, by G. J. Pearmain, 817
Automobile Division :
Effect of Gradient on Fuel Consumption and Speed of Road Vehicles, by Dr. C. R. Webb, 44
East Midlands Branch :
Annual Dinner, 691
Midland Branch :
Some Live Load Tests on Wire Ropes and Fittings, by T. E. Dimbleby, 734*
Mechanical Engineering Congress, International, Turin, Programme, 63
— — Research Board, Annual Report, 209
— — Research Laboratory, Equipment for Compression-Creep Tests at High Temperatures, by Dr. A. E. Johnson and N. E. Frost, 28*
— Handling Demonstration by Army, 499
— — Use of Pallets and Fork-Lift Trucks for, 522
— Lubricator. See *Lubricator*
— Oscillating Systems and Circuits, Analogy Between, 763*
— Stoker. See *Stoker*
Mechanics, Wave (Review), 228
Mechanisms, Kinematics of (Review), 613
Medd, R. T., on What is Moving Machinery, 179. See 99
Meddings, W. J., Ltd., Drilling Machine with Air-Hydraulic Feed Unit, 260*
Megator Pumps & Compressors, Ltd., Demonstration of Extinguishing Oil Fires by Fog Nozzles, 671*. See LETTER, 787
"Megger" Insulation Tester, 290
Mellor, L., the Late, 718
Melville, Dundas & Whitson, Ltd., Aero-Engine Factory at East Kilbride, 717*
Mercedes-Benz Motor Car, 587*
Merchant Ships. See *Ships ; Steamers ; Motorships*
— Shipbuilding. See *Shipbuilding*
Mercury-Arc Rectifiers, Electronic Arc-Suppression Equipment for, 100*
— — Rectifier, Grid-Controlled (Nevelin Electric Co., Ltd.), 321
— Boiler, Use of Titanium in, 455
Merryweather & Sons, Ltd., Inspection Ladder for Railway-Station Roofs, 118*
Mersey Docks and Harbour Board, S.S. "Vigilant," 158*
Merz & McLellan, Ltd., Boiler Plant at Trafford Power Station, 676*
Metals, Corrosion of. See *Corrosion*
— Fatigue of. See *Fatigue* under *Tests (Materials)*
— Hard, Electrical Process for Cutting, 690

Metals, Institute of :
Autumn Meeting, Southport :
Programme, 170
Inaugural Proceedings, 402, 438
Nomination of Officers, 402
Autumn Lecture on The New Metal Titanium, by Dr. M. Cook, 427. See 402, 438
Reports of Discussions, 438, 470, 541
Visits and Excursions, 470
Stretcher-Strain Markings :
Some Observations on Occurrence of Stretcher-Strain Markings in Aluminium-Magnesium Alloys, by R. Chadwick and W. H. L. Hooper, 438
Influence of Composition on Incidence of Strain Markings in Aluminium Alloys, by W. H. L. Hooper, 438
Stepped Stress-Strain Curve of Some Aluminium Alloys, by N. Krupnik and Prof. H. Ford, 438
Discontinuous Flow and Strain-Ageing in 6 per cent. Tin Phosphor Bronze, by Dr. N. H. Polakowski, 438
Yield Point Phenomena and Stretcher-Strain Markings in Aluminium-Magnesium Alloys, by Dr. V. A. Phillips, A. J. Swain and R. Eborall, 439
Some Methods of Measuring Surface Topography as Applied to Stretcher-Strain Markings on Metal Sheet, by W. H. L. Hooper and Dr. J. Holden, 439
Effect of Composition and Heat Treatment on Yield Point Phenomena in Aluminium Alloys, by Dr. V. A. Phillips, 439
Priming Paints for Light Alloys, by J. G. Rigg and E. W. Skerrey, 470
Discussion on Damping Capacity, 541
Oxidation and Sulphidation of Copper :
Oxidation of Copper in Temperature Range 200 deg. to 800 deg. C., by Dr. R. F. Tylecote, 470
Growth of Sulphide Films on Copper, by Drs. T. P. Hoar and A. J. P. Tucker, 470
Diffusion and Kirkendall Effect :
Micrographic Aspects of Diffusion of Zinc and Aluminium in Copper, by Dr. H. Bückle and J. Blin, 470
Formation of Intracrystalline Voids in Solution-Treated Magnesium-Aluminium Alloys, by E. Lardner, 470
Structure of Nickel-Rich Alloys :
Constitution of Nickel-Rich Alloys of Nickel - Titanium - Aluminium System, by Dr. A. Taylor and R. W. Floyd, 541
Study of Order-Disorder and Precipitation Phenomena in Nickel-Chromium Alloys, by Dr. A. Taylor and K. G. Hinton, 541
Constitution of Nickel-Rich Alloys of Nickel-Chromium System, by Dr. A. Taylor and R. W. Floyd, 541
Properties of Chromium and Its Alloys :
Properties of Cast-Chromium Alloys at Elevated Temperatures, by Dr. A. H. Sully, E. A. Brandes and A. G. Provan, 541
Effect of Temperature and Purity on Ductility and Other Properties of Chromium, by Dr. A. H. Sully, E. A. Brandes and K. W. Mitchell, 541
Metal, Liquid, Sampling Apparatus for, 735*
— Non-Ferrous, Semi-Manufactures of, and Monopolies Commission, 179
— Sheet, Stretcher-Strain Markings in, Methods of Measuring, 439
— Structure of. See *Metallography ; Microphotographs*
— Welding. See *Welding*
— World Production in 1951, 603
— Wrought, Non-Ferrous, Council, Formation of, 532
— See *Metallurgy; Microphotographs*
Metalastik, Ltd., Rubber Suspension of Railway Bogies, 830*
Metallic Surfaces, Properties of (Review), 516
Metallography. See *Metals; Metallurgy; Microphotographs*

Metallurgy :
Alloy, Aluminium, for Bascule Bridge, Aberdeen, 481
— — Use in Building Construction, 120
— — Copper in, Analysis of, Specification, 767
— — for Lifeboats, Birmabright, 829
— — for Motor Yacht "Morag Mhor," 180*
— — for Riveting, Properties of, 513*
— — Standard Parts, for Building Staging Units, 448*
— — Stretcher-Strain Markings in, 438
— Chromium, Properties of, 541
— Copper-Base, Economic Utilisation of, Report on, 222
— — See also *Bronze*, etc.
— High-Temperature, Creep Tests of, 455, 505*, 537*
— Iron, Brittle Fracture of, 772
— — High-Purity, Tensile and Impact Properties of, 773
— Light, Priming Paints for, 470
— Magnesium - Aluminium, Solution-Treated, Formation of Voids in, 470
— Nickel-Molybdenum, Wrought (H. Wiggin & Co., Ltd.), 248
— — Rich, Structure of, 541
— Titanium, Forging for Aircraft Propeller Blades, 373*
— — Properties and Application of, 402, 427, 438, 455, 603, 635. See LETTERS, 756, 787

Metallurgy—*continued.*
Blast Furnaces. See *Furnaces*
Bronze. See *Bronze*
Cast Iron. See *Cast Iron*
Corrosion of Metals. See *Corrosion*
Foundry. See *Foundry ; Moulding*
Furnaces, Electric. See *Furnaces*
— Metallurgical. See *Furnaces*
Heat Treatment of Aluminium Alloys, Effect on Yield Point Phenomena, 439
— — of Creep-Resisting Steels, Effect of, 539*
— — Hardening of Saw Segments (Firth Brown Tools, Ltd.), 91*
— — Induction Bar-Hardening Machine (General Electric Co., Ltd.), 121*
— — Tempering Temperature, Physical Properties of Steel as Functions of, 84
Iron Manufacture (Review), 740
— — See also *Furnaces, Blast*
— Ore. See *Ore*
Metals, Tests of. See *Tests (Materials)*
Metallurgical Industries of Sheffield, 89*
— Literature, Classification of, 376
— Research in Australia, 679
Metallurgists, Institution of, Platinum Metals Exhibition, 269, 461, 614
Rolling Mills. See *Rolling Mills*
Slag Cement Plant at Cluanie Dam, 557*. See *Erratum*, 640
Steel Furnaces. See *Furnaces*
— and Iron, Manufacture of (Review), 740
— Manufacture Related to Blast-Furnace Practice, 701
Welding. See *Welding*
See also *Iron and Steel Institute; Metals, Institute of; Microphotographs; Foundry;* and PARAGRAPH INDEX
Metcalf, B. L., on Men and Materials, 562
"Meteor N.F.11" Tailplane Aircraft, 404*
Meteorological Research in Australia, 680
— Station, Radar, Automatic, Pease Pottage, Crawley, 299*
— Work at Royal Observatories, 126, 211
Meteorology, Radio, Formation of, 316
Meters, Flow, Electromagnetic (Tobi N.V.), 542*
— — Mercurial (G. Kent, Ltd.), 702
— Poise, for Oil (Dobbie McInnes, Ltd.), 392
— Venturi, Calculation of Compressible Flow Through, 147
— See also *Electric*
Methane Explosions. See *Accidents*
— Use in Dual-Fuel Engines at Point of Ayr Colliery, 136
Metrological Research in Australia, 679
Metropolitan-Cammell Carriage & Wagon Co., Ltd., 1,000-h.p. Diesel-Electric Locomotive, 139*. See *Addendum*, 212
Metropolitan-Vickers Electrical Co., Ltd., Permanent-Magnet Crack Detector, 5*; Electrical Equipment for High-Speed Tramcars, 124*, 254*. See *Erratum*, 199; 250-Ampere Inert-Arc Welding Equipment, 261*; Control Panel for 8,000-s.h.p. Marine Steam Turbine, 262*; Model of 120-MVA 132/275-kV Transformer, 262*; 62-h.p. Electric Mining Locomotive, 279*; 25-MW Turbo-Generator, 283* ; Electric Motor at Shepcote Lane Works, Sheffield, 333*, 363*. See LETTER, 436*. Switchgear for Uskmouth Power Station, 552*; Portable Daylight Fluoroscope, 573*; Plant for Portuguese Hydro-Electric Schemes, 660*; Unified Boiler Control System, 676*; Fluorescent Lighting for Stockwell Garage, 703*; 1,225-h.p. Automatic Alternating-Current Winding Machine, 774*
— Water Board, Dismantling of Old Beam Engines, 501*
— See also *London*
MIAG Mühlenbau und Industrie G.m.b.H., Equipment for Grain Silo at Dublin, 580*
Micrometer, Braille (Moore & Wright (Sheffield), Ltd.), 58*
Microphotographs, Creep-Resisting Steels, 538*
— Surface of Hardened Bar of Steel, 121*
— Thick-Walled Tube, 225*
Microscope for Edges of Turbine Blades (Taylor, Taylor & Hobson, Ltd.), 192*
Microstructure of Metals. See *Microphotographs*
Middle East, Cathodic Protection of Oil Pipelines, 650
— Rio Grande Valley, New Mexico, Irrigation and Sediment Problems of, 3
Midlands, Notes from, 14, 46, 78, 110, 142, 174, 206, 238, 270, 302, 334, 366, 398, 430, 462, 494, 526, 558, 590, 622, 654, 686, 718, 750, 782, 814. See PARAGRAPH INDEX
Military Motor Transport. See *Motor*
Mill, Coal-Pulverising (Clarke, Chapman & Co., Ltd.), 354*
— Hammer, Electric (Scottish Mechanical Light Industries, Ltd.), 791*
— Pulverising, Uskmouth Power Station, 553*
— Rolling. See *Rolling Mills*
Miller, R. H., on Factors Affecting Helicopter Design, 454*
Milling and Grease-Producing Plant, High-Speed (Fryma Machinery Co., Ltd.), 253*
— Machines and Cutters. See *Machine Tools*
Mills, C. A., Model of Pumping Plant at Cardon Refinery, Venezuela, 394*
Millspaugh, Ltd., Paper-Making Machine, 59*; Centrifugal-Casting Foundry, 594, 629*
Milsum, J. H., on Aircraft De-icing by Thermal Methods, 424
Minchom-Sempun Flaw Detector, 736*
Mines, Chief Inspector's Report, 242
— Coal. See *Collieries*
— East Pool, Camborne, Cornwall, Pithead-Gear Collapse at, 402
— Ore Loader (Atlas Diesel Co.), 643*
— and Quarries, Inspector's Report, 1951, 659
— Safety in, Research on, Annual Report on, 626
— Winding. See *Winding*
— See also *Coal; Collieries; Mining; Ores; Winding;* and PARAGRAPH INDEX
Mineral Oils. See *Oils*
Mineral Resources, World, Their Occurrence and Utilisation, 381, 562
— See also *Coal; Mining; Ores;* and PARAGRAPH INDEX
"Minijet" Light Training Aircraft, 44*
Mining Machinery of Atlas Diesel Co., Sweden, 641*
— See also PARAGRAPH INDEX
Ministry of Labour and National Service. See under *Labour*
— of Supply. See *Supply*
— of Transport. See *Transport*
Mirrlees, Bickerton & Day, Ltd., Automatic-Control Equipment for Diesel Engine, 235*
Mirrors for Solar Energy Schemes, 370*, 409*
Mitchell Construction Co., Ltd., Slag Cement Plant at Cluanie Dam, 557*. See *Erratum*, 640
Mitchell, J., on Steelmaking Related to Blast-Furnace Practice, 701
Mitchell, K. W., on Properties of Chromium and Its Alloys, 541
Mixer, Agricultural, Tractor-Operated (F. W. McConnel, Ltd.), 105*
Model, 120-MVA 275/132-kV Auto Transformer (C. A. Parsons & Co., Ltd.), 263*
— for Determining Transformer Transient Voltages, 118
— Engineer Exhibition, 275
— Experiments. See *Aeronautics; Tank Experiments*
— of Gas-Turbine Driven Compressor (Harland & Wolff, Ltd.), 394*
— of 8,250-s.h.p. Geared Marine Steam Turbine (Pametrada), 297
— of Machinery for "Setter IX" Whale Catcher (National Gas and Oil Engine Co., Ltd.), 357*
— of Marine Boiler with Controlled Superheat Babcock & Wilcox, Ltd.), 393*
— of L. Mond's Laboratory of 1888, 87*
— of Pumping Plant at Cardon Refinery, Venezuela (Sigmund Pumps, Ltd.), 394*
— of River Severn at Bull's Bridge Research Laboratory, 120, 138*. See LETTER, 212
— of Sextuple-Effect Evapotirang Plant (G. & J. Weir, Ltd.), 395*
— for Stress Determination. See *Photo-Elastic*
— Structures of Celluloid, Tests by Isodynamometer, 517, 665*
— of Table Bay Harbour, Measurement of Wave Heights in, 245*, 267*
— Thermo-Hydraulic, of River Calder and Aire and Calder Canal, 138. See LETTER, 212
— 120-MVA 132/275-kV Transformer (Metropolitan-Vickers Electrical Co., Ltd.), 262*
Mond, L., His Laboratory in 1888, Model of, 87*
Mond Nickel Co., Ltd., Model of L. Mond's Laboratory, 1888, 87*
Monitoring Service for British Broadcasting Corporation, Receivers for, 137*
Monk, A., & Co., Ltd., Tank Factory, Leyland, Lancashire, 630*
Monmouthshire, Mamhilad, Experiments on Dressings for Soil Road at, 793
Monoplane. See *Aeronautics*
Monopolies and Restrictive Practices Commission and Semi-Manufactures of Non-Ferrous Metals, 179
Monsanto Chemicals, Ltd., Ethyl Silicate for Foundry Use, 239
Moore & Wright (Sheffield), Ltd., Braille Micrometer, 58*
"Mopumps" for Hot Liquids, 263*
"Morag Mhor," All-Welded Aluminium-Alloy Motor Yacht, 180*
Morane Saulnier Co., "Fleuret" Twin-Jet Training Aircraft, 43*
Morecambe Bay, Investigations by Hydraulics Research Board, 18
Morgan Fairest, Ltd., Blade-Forging Rolls, 58*
Morgan, J. (Builders), Ltd., Uskmouth Power Station, 552*
Morison, A. McA., the Late, 654
Morphew, K. I., on Applications of Calorimetry with Reference to Magnetic Steels, 765. See 517
Morris Commercial Cars, Ltd., Overdrive Gearbox for Heavy Vehicles, 512*
Morris "Minor" Motor Car, 534
Mortising Machines. See *Machine Tools*
Moscow, District Heating in, 473*, 507
Motion and Time Studies, Use and Techniques of, 390
Motor Barge. See *Motor Boat*
— Boat, Admiralty Barge, 70-b.h.p. Diesel-Driven (McGruer & Co., Ltd.), 170
— — Aluminium-Alloy Launch for Pakistan (Grimston Astor, Ltd.), 416*
— — D. C. Endert, Jr., Experiments with Launch, 403, 425
— — 35-b.h.p. Diesel-Driven Jolly Boat (R. A. Newman & Sons, Ltd.), 170
— — Fishing Cruiser "Gay Jane" (Albatross Marine, Ltd.), 777*
— — Inspection Launch for Royal Ceylon Navy (J. I. Thornycroft & Co., Ltd.), 301*
— — "Morag Mhor," All-Welded Aluminium-Alloy Yacht, 180*
— — Triple-Screw Launch for Venezuela (J. I. Thornycroft & Co., Ltd.), 680*
— Car Engines. See *Engines, Petrol*
— — Engineers. See *Mechanical Engineers, Institution of, Automobile Division*
— — Exhibition, International, Earl's Court, Engineering Developments at, 529, 534*, 565*, 587*
— — Ferry Terminal at Dover, 55*
— — Fuels. See *Motor Fuels*
— — Gearbox, Over-Drive, for Heavy Vehicles (Morris Commercial Cars, Ltd.), 512*
— — Goodwood International Race, 275
— — Two-Stroke Oil Engines for, Tests of, 385*, 419*. See *Erratum*, 519
— — Two-Stroke, 12-h.p., Oil Engine for (Turner Manufacturing Co., Ltd.), 663*
— — See also *Motor Vehicles; Motor Cycles;* and PARAGRAPH INDEX
— Carriages, Railway. See *Carriages*
— Cycle and Cycle Show, Earl's Court, 659
Motors, Electric, for Bascule Bridge, Aberdeen (Lancashire Dynamo & Crypto Co., Ltd.), 482*
— — for Circular-Kiln Brick-Making Plant (General Electric Co., Ltd.), 825*
— — 151-h.p., Control Panel for (W. H. Allen, Sons & Co., Ltd.), 258*
— — Electronic Control Cubicle for (British Thomson-Houston Co., Ltd.), 259*
— — Fitted Clutch Drive for (Marine Engineering Co. (Stockport), Ltd.), 183*
— — Fractional Horse-Power (Hoover, Ltd.), 353
— — Geared (A. Wiseman & Co., Ltd.), 356*
— — Geared, Low-Speed (Higgs Motors, Ltd.), 320*
— — 67-h.p., and Hessian Air Filter, 677*
— — for Paper-Making Machine, 595*
— — at Shepcote Lane Works of Firth-Vickers Stainless Steels, Ltd. (British Thomson-Houston Co., Ltd.), and (Metropolitan-Vickers Electrical Co., Ltd.), 332*, 363*. See LETTER, 436*
— — 45-h.p., for Single-Deck High-Speed Tramcars, 125*. See 254*. See *Erratum*, 199
— — Slip-Ring 80-h.p. (W. H. Allen, Sons & Co., Ltd.), 258*
— — Slip-Ring, Drip-Proof (Newman Industries, Ltd.), 262*
— — Squirrel Cage, Standard (Crompton Parkinson, Ltd.), 258*
— — Starters for (Brookhirst Switchgear, Ltd.), 326*
— — Starter, for Oil Engines (C.A.V., Ltd.), 325*, 791*
— — Totally-Enclosed Rotor Starters for (G. Ellison, Ltd.), 328*
— — Traction, for 1,500-h.p. Diesel-Electric Locomotive, 172*
— — 493-h.p. Traction, for Locomotive, 66*
— Fuels, Engine Research on, 37*
Motor Gear & Engineering Co., Ltd., Worm Reduction Gearbox, 291*
— Industry Research Association, Lindley High-Speed Test Track, 747
— Internal-Combustion. See *Aeronautics ; Engines; Motor Cars; Motor Boats; Tractors*
— Jolly Boat. See *Motor Boat*
— Launches. See *Motor Boats*
— Lorries. See *Motor Vehicles*
— Manufacturers, Commercial, and Road Transport, Spurrier Lecture, 821
— Marine. See *Engines; Marine Propulsion; Motorships*
— Omnibus, One-Man Operated (Guy Motors, Ltd.), 607
— — Trends in Design of, 821
— Paraffin. See *Engines, Oil*
— Petrol. See *Aeronautics; Engines, Petrol; Motor Boats; Motor Cars; Tractors*
— Road Rollers. See *Road Rollers*
— Spirit. See *Motor Fuel*
— Tractors. See *Tractors*
— Truck, Diesel-Driven, for Charging Furnaces (Conveyancer Fork Trucks, Ltd.), 412*
— — Fork-Lift, Battery-Operated (Lansing Bagnell, Ltd.), 203*
— — Fork-Lift, and Palletisation, Advantages of, 522
— — 1½-h.p. Petrol-Engined (Excelsior Motor Co., Ltd.), 32*
— Vehicle, Effect of Gradient on Fuel Consumption and Speed of, 44
— — Gearbox, Five-Speed Constant-Mesh (D. Brown & Sons (Huddersfield), Ltd.), 191*
— — High-Speed Test Track for, Lindley, 747
— — Lorry for Bulk Transport of Carbon Black (Scammell Lorries, Ltd.), 429*
— — Lorry, Heavy, Overdrive-Gearbox for (Morris Commercial Cars, Ltd.), 512*
— — Lorry Loader, Hydraulic (R. H. Neal & Co., Ltd.), 652*
— — Lorry-Mounted Tower Crane (Steels Engineering Products, Ltd.), 813*
— — Transport by Tank Landing Ships, 522
— — Van for High-Voltage Cable Tests (Crompton Parkinson, Ltd.), 62*
— — Work of Road Research Board on Equipment of, 177
— Wagons. See *Motor Vehicles; Tractors*
Motorships Under Construction, Lloyds Statistics, 137, 562
— "Ilala" in 500-ton Floating Dock, 200*
— Launches and Trial Trips of, 15, 47, 79, 111, 159, 187, 207, 248, 303, 335, 472, 540, 601, 670, 732, 799, 826
— "Pavia," Cunard Cargo Liner, 92*
— "Samoa," Cargo Liner, 217*
Mouchel, L. G., & Partners, Uskmouth Power Station, 552*
Mould, Sheli, Pneumatic Clamp for, 296*
— Steel Ingot (Brightside Foundry & Engineering Co., Ltd.), 90*
Moulding Flask for Millspaugh Centrifugal-Casting Foundry, 594, 629*
— Foundry, Ethyl Silicate for Use with, 239
— Machines, Wood. See *Machine Tools*
— Sheli, Process, Introduction and Appreciation, 251, 285
— — Pneumatic Clamp for Mould, 296*
— See also *Foundry*
Moundson, M. H., on Design and Manufacture of Street Lighting Lanterns, 370
Mountstuart Dry Docks, Ltd., Tank-Cleaning Plant for Oil Tankers, 149*
Mower, Gang, and Loader (E. S. Walley & Co., Ltd.), 106*
Mowlem, J., & Co., Ltd., Blithfield Reservoir, 598*
Mudd, O. C., on Economic Aspects of Corrosion Control, 650
Mullard, Ltd., Film Strips for Teaching Electrical Engineering, 83; Independent Side-Band Communications Receiver, 184; Automatic Radar Meteorological Station, Crawley, 299*
Multitubular Boilers. See *Boilers*
Municipal Tramways. See *Tramways*
Murad Developments, Ltd., 1-in. Capstan Lathe, 292*
Murex, Ltd., Arc-Welding Transformer Equipment, 356*
Murphy, T., on Webb's Approximation of Sec θ, 598
Murray, L. J., on Electronics in Switching of Telephone Calls, 413*, 445*. See 389
Museum, Camborne, Holman Brothers, Ltd., Rostowrack Cornish Engine at, 341*, 371
— Royal Scottish, Edinburgh, Annual Report, 83
— of Science and Industry, Birmingham, Opening of Engineering Hall, 214*. See LETTER, 276*
— — South Kensington, Booklet on "Conquest of the Air," 818
"Mystère" Fighting Aircraft, 74*

N.

NATIONAAL Luchvaart Laboratorium, Card Catalogue of Aerodynamic Measurements, 376
National Coal Board, Abernant Colliery Project, 243; Apprentice Training Scheme, 627; 1,225-h.p. Automatic Alternating-Current Winding Machine, 774*
— Dock Labour Board, Annual Report, 114
National Gas & Oil Engine Co., Ltd., 306-b.h.p. Eight-Cylinder Diesel Engine, 323*; Model of Machinery for Whale Catcher "Setter IX," 357*; Pressure-Charged Gas Engine, 748*
— Industrial Development Council of Wales and Monmouthshire, Welsh Industries Fair, 412*
— — Fuel Efficiency Service, Formation of, 562
— Physical Laboratory, Manufacture and Inspection of Aerofoil Models, by R. S. Marriner, 218*; Automatic Digital Computer of, 344, 351; Interferometer for Measuring Slip Gauges, by D. C. Barnes and M. J. Puttock, 757*
— Radio and Television Exhibition, 338
— Research Development Corporation, Annual Report, 818
— Smoke Abatement Society, Glasgow Conference, London Fog Disaster, by Dr. A. Parker, 497; Smoke from Domestic Fires and Industrial Fires, by Dr. F. J. Eaton, G. E. Hall and I. Jacob, 497. Efficient and Smokeless Combustion of Fuel Oils, by K. H. Sambrook, 498; Availability and Distribution, by C. Buist, J. O. Cooke, E. J. David and H. H. Prosser, 498; Smokeless Zones, by Dr. T. M. Clayton, 498
— Union of Manufacturers, Memorandum on Parallel Operation of Public and Private Electricity Systems, 626
Nationalisation of Electricity Supply, First Five Years of, 663
— of Water Supply, Statement on, 371
Natural Gas, Use in Canada, 820
Naval Aeronautics. See *Aeronautics*

Naval Architects, Institution of:
Autumn Meeting, Holland:
Inaugural Proceedings, 403
H.R.H. Prince of Netherlands, Acceptance of Honorary Membership, 403, 426
History and Characteristics of Netherlands, by Prof. H. E. Jaeger, 403
Dinner, 403
Visits and Excursions, 403
Reports of Discussions, 403, 425, 468, 486, 520, 584, 628
Present-Day Development of Ship Model Research in Netherlands Ship Model Basin at Wageningen, by Prof. W. P. A. Van Lammerein, 403. See 425
Tests of Launching Greases by J. Brown and J. M. Ferguson, 468
Optical Marking-Off System for Plates and Sections in Shipbuilding, by J. H. Krietemeijer, 570*. See 468, 486
On Propeller Manufacture with Special Reference to Planing of Blades and Dimensional Accuracy, by Prof. L. C. Burrill, 520
Hydromechanics Research Programme of Bureau of Ships, U.S. Navy, by Dr. F. H. Todd, 584
Investigations of Ships' Hull and Machinery Defects, by T. W. Bunyan, 628
Naval Architecture. See also *Warships*
— Construction Research Establishment, Testing Frame for Ships' Structures, 115*
— — See also *Warships*
Navigation, Aerial. See *Aeronautics*
— Light for "Ambrose" Lightship (Chance Brothers, Ltd.), 234*
Navvy. See *Excavator*
Navy, British. See *H.M.* under *Warships*
— United States. See *United States* under *Warships*
— See also *Naval; Warships;* and PARAGRAPH INDEX
Neal, R. H., & Co., Ltd., Hydraulic Lorry Loader, 652*
Neill, J. A., on High-Speed Track for Motor Vehicles, 747
Neill, J., & Co. (Sheffield), Ltd., Hacksaw Manufacture, 57*; Magnetic "Floater" for Separating Ferrous Sheets, 58*
Netherlands, History and Developments in, 403
— Iron and Steel Industry in, 488, 542
— Meeting, Institution of Naval Architects. See *Naval Architects*
— Railways, 2,958-h.p. Electric Locomotives, 65*
Networks, A. C., and Power Transmission Lines (Review), 99
Nevelin Electric Co., Ltd., Grid-Controlled Mercury-Arc Rectifier, 321
New Mexico, Fort Sumner Dam, Degradation of, 4*

New Mexico, Middle Rio Grande Valley, Irrigation and Sediment Problems of, 3
— South Wales Government Railways, 1,000-h.p. Diesel-Electric Locomotive for, 139*. See *Addendum*, 212; Electronic Arc Suppression in Traction Rectifiers, 773
— Zealand Government Railways, 1,500-h.p. Diesel-Electric Traction Set, 354*
— — Lyttelton Harbour, Investigations by Hydraulics Research Board, 18
Newcastle-upon-Tyne, King's College, Appeal for, 306, 558
Newcomen, T. Commemoration of Anniversary of, 244
Newman Industries, Ltd., Drip-Proof Slip-Ring Electric Motor, 262*; Held Copying Lathe with Electromagnetic Tool Control, 778*
Newman, R. A. & Sons, Ltd., 35-b.h.p. Diesel-Driven Motor Jolly Boat, 170
Newport, R. J., on Tunnels for Machkund Hydro-Electric Scheme, 683
Newsham, R., on Use of Electrical Resistance Strain Gauges on Concrete Structures, 487
Newton Chambers & Co., Ltd., 1¼-cub. yd. Diesel-Driven Excavator, 59*
Newton Collins, Ltd., Dust-Extractor Plant at Sheffield Refuse-Disposal Plant, 634
Nickel Anodes and Salts for Electroplating, Specification, 829
— Carbonyl, Discovery by L. Mond, 87*
— Electroplated Coatings of, Specification, 829
"Niforge" Die Casting (Carron-Parlanti, Ltd.), 762
N.L.L. Card Catalogue of Aerodynamic Measurements, 376
Nock, O. S., on Decentralisation of British Railways, 20. See LETTER, 84
Noise, Atmospheric, from Lightning, Investigations on, 241
— Engine, Practical Aspects of, 692
— Radio, from Sky, Investigations of, 316
Non-Ferrous Die Casting Co., Ltd., Reorganisation of Die-Casting Foundry of, 185*
— — Metals. See *Metals; Metallurgy*
Norsk Flyindustri A/S, Aluminium Lifeboat with 10-h.p. Petter Diesel Engine, 829*
North Atlantic Treaty Organisation, Proposals for Aeronautical Documentation, 499
North British Locomotive Co., Ltd., 625-h.p. Diesel-Hydraulic Locomotives, 651*
— Carolina, Kitty Hawk, Wright Brothers Flights at, 737*, 753. See *Errata*, 791
— Notes from. See *Scotland*
— of Scotland Hydro-Electric Board, Slag Cement Plant at Cluanie Dam, 557W* See *Erratum*, 640
— Wales, Aber Gorge, Use of Rockets for Conductor Stringing Across, 114
Northern Aluminium Co., Ltd., Bulk-Cement Transporter, 109*; Aluminium Alloy for Bascule Bridge, Aberdeen, 481*
Notched-Bar Tests. See *Tests (Materials)*
Notes. See *Lancashire and South Yorkshire; Midlands; Scotland; South-West; Labour.* See also PARAGRAPH INDEX
— on New Books. See *Books* and LITERATURE INDEX
Nottingham, Aslib Conference, Classification System of American Society for Metals and Special Libraries Association, by P. E. Colinese, 376
— University, Stuart Lecture on Engine Research in Fuels and Lubricants, by Dr. C. G. Williams, 37*; Machine for Measuring Load and Deformation of Rubber, 196*; Investigation on Bending of Simply Supported Rectangular Plates, 308*, 358*
Nozzles for Fluid-Flow Measurement, Problems of, 6*, 35*. See LETTER, 244*
— Fog, for Extinguishing Oil Fires, 671*. See LETTER, 787
Nuclear Energy for British Power Stations, 818, 828
— — Possibility of Development of, 345*, 372, 381. See *Erratum*, 375
— Particle Laboratory, Queen Mary College, London, Opening of, 91
— Power, Economic, Outlook for, 345*, 372, 381. See *Erratum*, 375
— Reactions, Low-Energy, Experiments on, 275
— Research, European Organisation for, Establishment of, 179
Nuffield Foundation, Report of, 371
— — and Royal Society, Commonwealth Bursaries, 147
— Organisation, 43-h.p. Four-Cylinder Vaporising-Oil Engine, 22*
Numbers, Preferred, British Standard Publication, 829
Nuts and Bolts for Aircraft, Steel and Aluminium-Alloy, Specification, 15
— Runner for Use in Corners (Desoutter Brothers, Ltd.), 294*
— Screws and Bolts, Black, Specification, 606
— — Machine, Unified, Specification, 512
Nyasaland Railways, Ltd., 500-ton Floating Dock on Lake Nyasa, 200*; Aluminium Wagon for, 798
Nylon Factory, Control of Air Conditioning in, 62

O.

Obituary:

Barnett, W. A., 796
Bassett-Lowke, W. J., 607
Bedford, R. W., 522
Blackburn, A. B. E., 435
Bock, A. F., 47
Bond, F. W., 586
Bousase, Prof. H., 788*
Butler, P., 436
Carter, T., 60
Charlton, R. B., 14
Clutterbuck, H. S., 564
Cottee, J. W., 238
Crossley, F. P. I., 366
Darley, Sir B. D., 244
Dawson, W., 46

Obituary—*continued.*

Denton, C. R., 110
Donking, T. H., 590
Dyball, R. S., 718
Edgecombe, J. E., 212
Evans, A. D., 782
Fawssett, E., 110
Fenwick, W. O., 308
Fife, R. B., 558
Ford, J., 526
Fraser, J. J., 170
Gardner, C. A., 590
Glover, Col. G. T., 78
Gourley, J. H., 334
Grey, C. G., 789
Harmer, F., 366
Hartt, F., 813
Heywood, T. E. H., 789
Hood, W., 693
Hughes, W. C., 686
Humphrey, G., 558
Hutton, D., 814
Kellett, W., 46
Kelley, Dr. G. L., 244
Kilner, Major Sir H., 212*
Ledward, H., 781
le Maistre, C., 84
Malone, C. A., 526
Marrs, D. B., 366
Matthews, R. H., 238
McGraw, C., 372
McGregor, J., 21
Mellor, L., 718
Morison, A. McA., 654
Onyon, Eng.-Capt. W., 148
Orchard, R. W., 398
Parkin, F. M., 622
Pendred, L. St. L., 693*
Poppleton, C., 270
Prandtl, Prof. L., 275
Pyke, L., 756
Rattee, S. G., 51
Rawlings, W. R., 621
Readhead, Lady, 590
Richardson, Lieut.-Col. Sir P. Wigham, 718
Ripley, L., 500
Robson, J. T., 302
Sarjeant, C. J., 622
Saxton, W. H., 494
Siddons, R. A., 78
Simpson, J., 494
Smith, F. S., 490
Smith, Prof. S. P., 276
Spanner, E. F., 212. See LETTER, 338
Sulzer, Dr. R., 21*
Swift, F., 590
Thomas, B., 11
Thompson, W., 276
Tingle, F. L., 270
Vignoles, Lt.-Col. W. A., 563
Viner, A., the Late, 814
Waddington, R. B., 490
Walker, R. C., 381
Watts, P. J., 250
Wells, G. E., 28
Westwood, Lord, 447
Whipple, R. S., 820*
Williamson, J., 276
Wilson, A., 686
Wilson, R., 270
Winder, Sir A., 819
Wright, Sir J., 114, 148*, 213
Yates, W., 135

Observatory, Royal, Greenwich, Herstmonceux, Astronomer Royal's Report, 125, 211
Obsolete Production Equipment in United States, Survey, 627
"Ocean Vulcan," S.S., Sea Trials of, Report (Review), 165
Officers (Merchant Navy) Federation, Jubilee of, 402
Ohlo, Dayton, Work of W. and O. Wright, 737*, 753. See *Errata*, 791
— United States, Atomic Power and Electricity Supply in, 818
Oil Burner. See *Oil-Fuel Burner*
— Engines. See *Engines, Oil; Motor Cars; Motor Boats; Tractors*
— Fires, Extinguishing by Fog Nozzles, Demonstration of, 671*. See LETTER, 787
— Flames, Length of, in Open-Hearth Furnace, 725, 744
Oil-Fuel Burner, Safety Mechanism for (British Combustion Equipment, Ltd.), 634*
— — Burning Equipment, Test House for, White's Marine Engineering Co., Ltd., 110*
— — Heavy, Centrifuge for (Sharples Centrifuges, Ltd.), 798*
— — Smokeless Combustion of, 498
— Lubricating, Engine Research on, 37*
— Motors. See *Engines, Oil; Motor Vehicles; Motor Boats; Tractors*
— and Petrol Bulk Terminal Wandsworth, 308
— — Pipe Coupling (Tufnol, Ltd.), 260*
— Pipeline, Cathodic Protection of, 650
— Production from Coal, Fischer-Tropsch Process for, 296, 297
— Purifier (Alfa-Laval Co., Ltd.), 259*
— Refining in Europe, Report on, 210
— Switches. See *Switchgear*
— Tankers, Cleaning Plant for Tanks of, 149*
— — under Construction, Lloyds Statistics, 137, 562
— — "Helix," Turbo-Electric Steamer, 619*
— — Launches and Trial Trips of, 15, 47, 79, 111, 159, 187, 207, 248, 303, 335, 472, 540, 601, 670, 732, 799, 826
— — "Schenectady," Failure of, 70, 187
— — "World Enterprise," "Weldex" Air Preheater for, 417*
— Tractors. See *Tractors*
— Waste, Firing Unit for (Kamel Products, Ltd.), 640*
— See also *Lubrication; Petroleum*
Old Centralians Association, Annual Dinner, 692
Oldbury Works of Accles & Pollock, Ltd., 161*, 193*, 225*
Olsen, A. J. C., Yeast Factory at Dovercourt, 76*
Olympia. See *Exhibition*
"Olympus Canberra" Flying Test-Bed, 406
"Omnia" Gearbox, Variable Drive, 829*
Omnibus, Motor. See *Motor Omnibus*
Onyon, Eng.-Capt. W., the Late, 148
Open-Hearth Furnace. See *Furnace*
Opening Bridges. See *Bridges*
Operating Machinery for Bascule Bridge, Aberdeen, 481*
Optical Marking-Off System for Plates and Sections in Shipbuilding, 486, 570*
— Measuring Tools, Ltd., Optical Equipment for Large Universal Boring Machine, 450*
Optics, Work of W. H. Wollaston in, 614
Orange Free State Coalbrook Fischer-Tropsch Plant, 297
Orbits, Rocket and Comet, Tables for (Review), 613
Orchard, R. W., the Late, 398
Ore, Iron, Crushing Rolls for (Hadfields Ltd.), 59*
— — Mine Loaders (Atlas Diesel Co.), 643*
— — Preparation Research on North-East Coast, 116*
Orifices for Fluid-Flow Measurement, Problems of, 6*, 35*. See LETTER, 244*
Orloff, G., on 4,000-lb. per sq. in. Hydraulic Systems, 766*
Orr, J. L., on Aircraft De-Icing by Thermal Methods, 424
"Orsova," S.S., "Weldex" Bled-Steam Air Preheater for, 417*
Osborn, S., & Co., Ltd., Tube Expanders, 57*; Expanding Tap, 57*
Oscillating Systems, Mechanical, and Electric Circuits, Analogy Between, 763*
Oscillations, Electric. See *Electric*
Oudeman, M., on Composition of Magnesium Anodes for Cathodic Protection, 650
Ovens, Drying, Gas-Fired, for Printed Steel Sheets (Stordy Engineering Ltd.), 779*
Overdrive Unit, Laycock de-Normanville, Car 587*
Overhead Cranes. See *Cranes*
— Lines, Power Transmission and A.C. Network (Review), 99
— — Power Transmission, British, Economics of, 827
— — Power Transmission, British Electricity Authority's Annual Report, 466
— — Power Transmission, Insulation for, 767
— — Power Transmission, Lancaster-Morecambe-Heysham Railway Line, 459*
— — Power Transmission, Use of Rocket for Conductor Stringing, 114
— — Power Transmission, 275-kV System, 122*
— — Power Transmission, 275-kV Tubular Tower for, 678*. See LETTER, 787
— — Power Transmission, Wood Poles for, Specification, 79
Overload, Torque, Safety Device for, 682*
"Overturn" and Stratification, in Lakes and Reservoirs, 821
Oxford University, Conference on Young Worker: Education for Human Relations, 660
Oxy-Acetylene Blowpipe. See *Blowpipe*
— — Welding. See *Welding*
"Oxybloc" Oxygen Generator, 704*
Oxygen, Dissolved, in De-Aerated Water, Estimation of, 103
— Generating Plant (Air Products Inc.), 237*
— — Plant (The Butterley Co., Ltd.), 237*
— Generator, Portable (K. W. Chemicals, Ltd.), 704*

P.

"P.111A" Delta-Wing Research Aircraft, 375*
"Packaged" 250-b.h.p. Diesel-Driven Power Unit, 289*
Paint, Priming, for Light Alloys, 470
Painter Brothers, Ltd., Portable Aluminium-Alloy Mast, 127*
Pakistan and Northern India, Land Reclamation in, 233
Palladium, Discovery by W. H. Wollaston, 614. See 269, 461
Palletisation and Unit Loads, Symposium on, 522
Palmer, G. A. S., "Tobiflux" Flow Meters, 542*
P.A.M., Ltd., Temperature and Humidity Control Units, 171*
Pametrada, Model of 8,250-s.h.p. Geared Marine Steam Turbine, 297; Guarding Valve for Sensitive Vacuum Gauge, 297*; 3,500-h.p. Marine Gas Turbine, 491*
Panel Fasteners, "Vibrex" (Silentbloc, Ltd.), 827*
— Measuring and Control, for Industrial Processes, Dimensional Features of, Specification, 288
Panhard "Dyna" Motor Car, 535*
Pannell, J. P. M., on Survival at Sea, 532. See 458, 465
Pantin, W. & C., Ltd., Conveyors at Ice-Cream Factory of T. Wall & Sons, Ltd., 502*
Paper-Making Machine (Millspaugh, Ltd.), 59*
— — Machine, Electronically - Controlled, Guard Bridge Paper Co., Ltd., 595*
Paraffin Appliances, Domestic, Specification, 829
— Engines. See *Engines, Oil*
— Tractors. See *Tractors*
Paris International Air Salon, 19, 42*, 50, 73*
Park Gate Iron & Steel Co., Ltd., Pneumo-Hydraulic Control of Blast-Furnace Blowers, 761*
Parker, Dr. A., on London Fog Disaster, 497; on Fuel and Productivity, 618
Parker, T., Ltd., Rotary Converter, 276. See 216*
Parkin, F. M., the Late, 622
Parlanti Process for Die Castings, 762
Parnell, J., & Son, Ltd., Foundations for Large Universal Boring Machine, 449*
Parsons, C. A., & Co., Ltd., Heaton Works of, 93; Model of 120-MVA 275/132-kV Auto Transformer, 263*; Core and Windings of 750-kVA Transformer, 264*; High-Pressure Shaft for 60-MW Steam Turbine, 264*; Pipe Bending and Fabrication Shop, 313; Design and Research Building of, 713*
Parsons Chain Co., Ltd., Jubilee of, 563
— Turbines. See *Turbines, Steam; Marine Propulsion*
Parton, Dr. J. E., on Combined Magnetisation of Magnetic Materials, 697*, 731. See 517
Pasir Panjang Power Station, Singapore, 283. See *Erratum*, 384
Passenger Aeroplane. See *Aeroplane* under *Aeronautics*
— Steamers. See *Steamers*
"Pathfinder" Riley Motor Car, 588*
Pattern-Making Machines. See *Machine Tools*
Paul, J., & Co., Ltd., Prestressed-Concrete Grain Silo at Dublin, 577*
"Pavia," M.S., Cunard Cargo Liner, 92*
"P.C.P." Overhead Conveyor Kit, 800*
Pearl Scale, Bowing Operation on (G. Ibberson & Co.), 91*
Pearmain, G. J., on New British Standard System of Limits and Fits, 817
Pease Pottage, Crawley, Automatic Radar Meteorological Station, 299*
Peattie, K. R., on Bending of Simply-Supported Rectangular Plates, 308*, 358*
Peebles, A. A., on Physical Properties of Steel as Functions of Tempering Temperature, 84
"Pegaso" Motor Car, 566*
Pelletising Machine, Experimental, for Iron Ore, 116*
Pelton Wheels for 75-MW Turbo-Alternators, Santa Massenza Power Station, 269*
Pendred, L. St. L., the Late, 693*
Penstocks for Julia River Power Station, Zurich, 129*
Percival Aircraft, Ltd., Thirty-Six Passenger Air Liner, 471
Percivall, A. E., on Tubular Towers for Transatlantic Lines, 787. See 678*
Perkins, C. D., on Boundary Layer and Circulation Control, 453
Perkins, P., Ltd., Earlsfield Works for Diesel-Engine Production, 12*; Diesel-Engine Production by, 787
Permanent Magnets. See *Magnets*
Personal, 15, 47, 79, 111, 143, 175, 207, 239, 271, 303, 335, 367, 399, 431, 463, 495, 527, 559, 591, 623, 655, 687, 719, 751, 783, 815
Perspective Draughting Machine (F. Kuhlmann K.G.), 202*
Petch, Dr. N. J., on Cleavage Strength of Polycrystals, 772
Peterborough Technical College, Opening of, 504
Petrol and Oil Bulk Terminal, Wandsworth, 308
— motors. See *Aeronautics; Engines, Petrol; Motor Cars; Motor Boats; Tractors*
— Tractors. See *Tractors*
Petroleum, Use in Canada, 820
— Equipment, Council of British Manufacturers of, Tenth Anniversary Luncheon, 531
— Installations in Middle East, Cathodic Protection of, 650
— Plant, Symbols on Flow Diagrams of, Specification, 798
— Science of Vol. V, Part II (Review), 228
— Storage and Distribution Depot, Pickering, 250*
— See also *Oil; Paraffin; Engines, Oil*
Petters, Ltd., 2·5-h.p. Single-Cylinder Air-Cooled Diesel Engine, 87*; Diesel-Driven Air Compressor, 323*; 60-h.p. Marine Diesel Engine, 357*; 80-b.h.p. Eight-Cylinder Diesel Engine, 813*
Phillips, Dr. V. A., on Stretcher-Strain Markings in Aluminium-Magnesium Alloys 439; on Yield Point Phenomena in Aluminium Alloys, 439
Phosphor-Bronze, 6-per cent. Tin, Discontinuous Flow and Strain-Ageing in, 438
Photo-Elastic Tests, Isodynamometer for Celluloid Models, 517, 665*
Photo-Electric Protective System, Long-Range (General Electric Co., Ltd.), 637
Photographic Lenses, Resolving Power of, Method for Determining (Review), 581
Photography, Work of W. H. Wollaston on, 615
Photometer and Colorimeter "Physical Eye" for Fluorescent Tubes, 388*
Photometry (Review), 227
Photomicrographs. See *Microphotographs*
Photo-Printing, Mercury-Vapour Discharge Lamps for, 547*
"Physical Eye" Photometer and Colorimeter for Fluorescent Tubes, 388*
— Laboratory. See *National Physical*
— Similarity and Dimensional Analysis (Review), 516
Physics and Engineering, Advanced Mathematics in (Review), 613
— Flames, Their Structure, Radiation and Temperature (Review), 418
— Luminescence and Scintillation Counter (Review), 644
— Nuclear Reactions, Low-Energy, Experiments on, 275
— Research in Australia, 679
— of Solar Radiation, 372, 377*, 409*
— Wave Mechanics (Review), 228
— See also PARAGRAPH INDEX
Pickering Petroleum Storage and Distribution Depot, 250*
Pickles, A. T., on Measurement of Efficiency of Heating in Buildings, 422
Pickling Vat, Mechanical, for Seamless Tube Manufacture, 164*
Pig-Food Mincing Machine, Electrically-Driven (Taskers of Andover (1932), Ltd.), 45*
Pilot Works, Ltd., Hydraulic Cropping Machine, 263*
Pimlico District Heating Scheme, 422, 507*

Pinions. See *Gears ; Gearing ; Marine Propulsion*
Pipe Bending and Fabrication Shop, C. A. Parsons & Co., Ltd., 313*
— Fittings, Butt-Welded, Steel Specification, 512
— Flanged, Cast-Iron, and Flanged Fittings, Specification, 767
— Heating Machine, Electric (A.I. Electric Welding Machines, Ltd.), 257*
— Steam. See *Steam Pipes*
— See also *Tubes*
Pipelines, Carrying Capacity of, Reduction with Age, 821
— Cathodic Protection of, 650
— Filter Unit (Doulton & Co., Ltd.), 327*
— Fluid-Flow Measuring Devices for, 6*, 35*. See LETTER, 244*
— and Storage Tanks, Cathodic Protection of, Russian Book on (Review), 659
Pirelli-General Cable Works, Ltd., Fire-Resisting Electric Cables, 182
Piston-Ring Wear Measuring Plant (Shell-Mex & B.P., Ltd.), 395*
— Variable-Ratio, of British Internal Combustion Engine Research Association, 607*
Pitting. See *Corrosion*
Planing Machine. See *Machine Tools*
Plastics, Use in Motor Cars, 565*
Plate, Copper, Specification, 606
— Mild-Steel, Brittle Fracture of, 639. See 70, 187, 220
— Rectangular, Simply-Supported, Bending of, 308*, 358*
— Ship, Brittle Fracture of, 70, 187, 220. See 639
— — Optical Marking-off System for, 486, 570*
Platform, Transport, Tractor-Mounted (Scottish Mechanical Light Industries, Ltd.), 45*
Plating, Electro. See *Electro*
— Tin, Thickness Measurement by Radioactive Materials, 157
Platinum Metals Exhibition, 269, 461, 614
Plessey Co., Ltd., Liquid-Fuel Starter for Gas Turbine, 733*
Plotting Table, High-Speed (Dobbie McInnes, Ltd), 391*
Plough, Disc, Reversible (Ransomes, Sims & Jefferies, Ltd.), 811*
Plywood, Investigations on, 337
Pneumatic Time-Delay Relay (Electro Methods Ltd.), 218*
— Tools. See *Machine Tools*
— See also *Compressed Air ; Air Compressor*
"Pneumerstat" for Regulating Metered Air Supplies, 63*
Poppleton, C., the Late, 270
Point of Ayr Colliery, Dual-Fuel Engines at, 136
Poise Meter for Oil (Dobbie McInnes, Ltd.), 392
Polakowski, Dr. N. H., on Discontinuous Flow and Strain-Ageing in Tin Phosphor Bronze, 438
Polarised Light. See *Photo-Elastic*
Poles, Wood, for Overhead Lines, Specification, 79
Pollution, Atmospheric, and Alkali Works Report, 266
— — Causes, Effects and Prevention, 747
— — and the Law, 787
— — in London, Committee on, 659
— — and Smoke Abatement, 497
— — Work of Fuel Research Board on, 145
Polycrystals, Cleavage Strength of, 772
Polytechnic. See *Education*
Port of London Authority, Docks of, 637
— of Southampton, Growth of, 500
Portable Engine. See *Engine*
— Machine Tools. See *Machine Tools*
Portal Frames, Pre-Cast, Reinforced-Concrete, for Workshop, 93*
— — for Warehouse, Use of Bailey-Bridge Units for, 601*
Portasilo Co., Silos for Cement, 109*
Portland Cement. See *Cement*
Portugal, Hydro-Electric Developments in, 660*
Post Office, Prestressed-Concrete Multi-Storey Building, 667
— — Submarine Telephone Cable to America, 755
Postmaster General, Report of Television Advisory Committee, 81
"Potez 75" Ground-Support Aircraft, 74*
Poultney, E. C., on Standard Locomotives in India, 50 Years Ago, 801*
Powder Cutting Blowpipe Equipment (British Oxygen Co., Ltd.), 258*
— Diamond, Classification of, Specification, 143
— Fluorescent, Measuring Particle Size of, 388*
Power Arm, Tractor-Operated (F. W. McConnel, Ltd.), 105*
— and Fuel Resources, Britain's, Conservation of, 735
— Gas. See *Engines, Gas*
— Nuclear, Economic, Outlook for, 345*, 372. See *Erratum*, 375
— Pack Diesel Engine (A.E.C., Ltd.), 353*
— — 60-h.p. Diesel Engine (Sentinel (Shrewsbury), Ltd.), 392*
— — Oil Engine (Rolls-Royce, Ltd.), 265*
— Plants for Aircraft (Review), 299
— — Hydro-Electric, Ala, Italy, 268*
— — Hydro-Electric, Calculations of Oscillations in Conduit with Surge Tank (Review), 517
— — Hydro-Electric, Castelo do Bode and Vila Nova, Portugal, 660*
— — Hydro-Electric, Ceannacroc, Cluanie Dam at, 557*. See *Erratum*, 640
— — Hydro-Electric, for City of Zürich, 129*
— — Hydro-Electric, European, Potential, 178
— — Hydro-Electric, in France, 619
— — Hydro-Electric, Machkund, Tunnels for, 683
— — Hydro-Electric, Santa Massenza, Italy, 269*
— — See also *Power Stations ; Power, Water ; Substations*
— Press. See *Machine Tools*
— Resources, World, 381
Power Station British, Development of Plant for, 818, 827
— — Electric, Atmospheric Pollution by, 266
— — Atomic Developments of, 593
— — Electric, British Electricity Authority's Annual Report, 466
— — Electric, Congella, Electrostatic Precipitators, 776
— — Electric, and District Heating, 422, 473*, 507*
— — Electric, Economy in Construction of, Report on, 498
— — Electric, Gas-Turbine, Beznau, Switzerland, 611*
— — Electric, Hackney, Prevention of Spontaneous Combustion in Coal Stocks at, 727*
— — Electric, Huncoat, Fireless Steam Locomotive for, 608*
— — Electric, Pasir Panjang, Singapore, 283. See *Erratum*, 384
— — Electric Plant Development in Great Britain, 818, 827
— — Electric, Prevention of Atmospheric Pollution by, 145
— — Electric, Public and Private, Parallel Operation of, 626
— — Electric, South Africa, New, Establishment of, 532
— — Electric, Trafford, Unified Boiler Control at, 676*
— — Electric, on Tyne and Tees-Side, 94
— — Electric, Uskmouth, 552*
— — See also *Power Plants ; Substations*
— Supply, Electric, British Electricity Authority's Annual Report, 466
— — Electric, for City of Zürich, 129*
— — Electric, 50-Cycle Single-Phase, for Lancaster-Morecambe-Heysham Line, 459*
— — Electric, Developments and Future Possibilities of, 827. See 818
— — Electric, Some Development on International Rivers, 141
— — Electric, Developments in Italy, 268*
— — Electric, and District Heating, 422, 473*, 507*
— — Electric, in France, 619
— — Electric, Legislation and Costs of Electricity Metering, 786
— — Electric, Nationalised, First Five Years of, 663
— — Electric, Nuclear Power Schemes for, 345*, 372. See *Erratum*, 375
— — Electric, Public and Private, Parallel Operation of, 626
— — Electric, for Shepcote Lane Works, Sheffield, 332*, 365
— — Electric, Tank Factory, Leyland, 631
— — Electric, in United States, 818
— Transmission, Overhead Lines and A.C. Networks (Review), 99
— — Overhead Lines, British, Economics of, 827
— — Overhead Lines, British Electricity Authority's Annual Report, 466
— — Overhead Lines, Insulation for, 767
— — Overhead Lines, Lancaster-Morecambe-Heysham Railway Line, 459*
— — Overhead Lines, Use of Rocket for Condenser Stringing, 114
— — Overhead Lines, 275-kV System, 122*
— — Overhead Lines, 275-kV Tubular Tower for, 678*. See LETTER, 787
— — Overhead Lines, Wood Poles for, Specification, 79
— — See also *Gearing ; Marine Propulsion*
— Unit, 250-b.h.p. "Packaged" Diesel-Driven (Crossley Brothers, Ltd.), 289*
— Water, in Brazil, and A. W. K. Billings (Review), 803
— — Use in Canada, 820
— — See also *Hydraulic ; Power Plants, Hydro-Electric ; Pelton Wheels ; Turbines, Hydraulic*
— Wind, Possibilities of, 33*
Pownall, J. F., on Grand Contour Canal, 741*
Prae Wood, St. Albans, Wind-Power Equipment Exhibition at, 33*
Prandtl, Prof. L., the Late, 275
Precipitators, Electrostatic, for Pulverised-Fuel Boilers, Theory and Operation of, 776
Preece, Cardew and Rider, Singapore Power Station, 283. See *Erratum*, 384
Preferred Numbers, British Standard Publication, 829
Presidential Address to Association of Public Lighting Engineers, by C. C. Smith on Administrative and Technical Problems in Public Lighting, 370
— — to British Association, by Sir E. Appleton, on Science for Its Own Sake, 315. See 343
— — to British Association, Section G (Engineering), by Lord Dudley Gordon, on Engineering in Next Two Thousand Years, 381. See 343
— — to Institution of Civil Engineers, by W. P. Shepherd-Barron, on London Docks, 637
— — to Institution of Electrical Engineers, by H. Bishop, on the British Broadcasting Service, 543, 573. See 499
— — to Institution of Engineers and Shipbuilders in Scotland, by Sir W. Wallace, on Survival at Sea, 458. See 465. See LETTER, 532
— — to Institution of Locomotive Engineers, by R. C. Bond, on Motive Power in British Railways, 439
— — to Institution of Mechanical Engineers, by A. Roebuck, on Training of Mechanical Engineers and Craftsmen, 533. See 531
— — to Institution of Structural Engineers, by Lieut.-Col. R. F. Galbraith, on Developments in Structural Engineering, 501
— — to Junior Institution of Engineers, by Sir J. Hacking, on Developments and Future Possibilities of Electricity Generation, 827. See 818
— — to Liverpool Engineering Society, on Research and Production in Engineering, 594
Presidential Address to Manchester Association of Engineers, by Prof. H. W. Baker, on Industry and Technical Education, 467
Press. See *Machine Tools*
Pressure Gauge, Plunger (Bryce Burger, Ltd.), 670*. See *Addendum*, 736
— Vessels, Welds in, Ultrasonic Examination of, by W. J. Fraser & Co., Ltd., 211
Preston and Stafford Works of English Electric Co., Ltd., 19
Prestressed Concrete. See *Concrete, Prestressed*
Prestressing, International Federation of, London Congress of : Report of Proceedings, 500 ; Influence of Abnormal Temperatures, by A. W. Hill, 490 ; Ultimate-Load Design of Statically-Determinate Beams and Slabs, by Prof. G. Magnel, 490 ; Statically-Indeterminate Structures in Elastic and Plastic States, by Y. Guyon, 490, 551
— Jacking Unit for (Cable Covers, Ltd.), 606
— Schemes for Concrete, Demonstration of, 727
Priest Furnaces, Ltd., Furnaces for Shepcote Lane Works, Sheffield, 333*, 363
"Princess" Flying Boat at High Altitudes, 331* ; Future of, 653
Printing, Photo, Mercury-Vapour Discharge Lamps for, 547*
— and Roller Coating Machines for Steel Sheets, 779*
Prisms, Elastic, Axes of Twist in, 769*
Pritchard, Capt. J. L., on Work of Wright Brothers for Aviation, 823. See 828
Procter, W. S., on Sound and Television Broadcasts of Coronation 775
Production Census for 1954 Scope of, 380
— Control, Report of British Productivity Council, 530
— Engineers, Institution of, Herbert Paper on Industrial Application of Radioactive Materials, by Sir J. Cockcroft, 157 ; Annual Dinner, 499
— Equipment, Obsolete, in United States, Survey, 627
— Management in United States, Teaching and Practice of, 689. See *Addenda*, 813. See LETTER, 756
Productivity Teams' Report on Machine-Tool Industry, Comments on, 10
Professional Classes Aid Council, Annual Report, 147
— Code of British Consulting Engineers, 658
Propellers, Aerial. See *Aeronautics*
— Marine, Investigations on Defects in, 628
— — Manufacture of, 520
— — Research at Wageningen Tank, 403, 425
— — Rotol, Variable-Pitch, H.M.S. "Grey Goose," 673*
— — Variable-Pitch (Rotol Ltd.), 582*
Propulsion of Ships. See *Marine Propulsion ; Engines; Turbines; Propellers*
Prosser, H. H., on Availability and Distribution of Smokeless Fuels, 498
Protection Units for Oil Engines (Teddington Industrial Equipment, Ltd.), 395*
Provan, A. G., on Properties of Chromium and Its Alloys, 541
Provincial Exhibitions, Ltd., Fuel Efficiency Exhibition, Manchester, 691
Public Affairs and Business, Facts, Files and Action in (Review), 484
— Health Engineering (Review), 134
— Lighting Engineers, Association of, Annual Conference, Liverpool, Presidential Address by C. C. Smith on Administrative and Technical Problems in Public Lighting, 370; Utilisation Factor in Public Lighting, by G. Fitton, 370; Criteria in Quality of Street Lighting, by J. B. de Boer, 370; Design and Manufacture of Street Lighting Lanterns, by M. H. Moundson, 370; Public Lighting in Belgium, by A. Boereboom, 370
Pugh *versus* Manchester Dry Dock Co., Legal Decision on, 691
Pulley Drives and Variable-Speed Gear Unit (Bourdon Tools, Ltd.), 829*
Pulling, M. J. L., on Sound and Television Broadcasts of Coronation, 775
Pulsometer Engineering Co., Ltd., Buscot Waterworks Water-Treatment Plant, 493
Pulverised Fuel at Congella Power Station, Electrostatic Precipitation for Dust Nuisance, 776
— — Plant, Uskmouth Power Station, 553*
Pump, Accelerator, for Central-Heating Systems (Ryaland (Manchester), Ltd.), 287*
— Air. See *Air Compressors*
— Axial-Flow, for Transformer Oil (Drysdale & Co., Ltd.), 355*
— Centrifugal (J. Beresford & Son, Ltd.), 653
— — (Sigmund Pumps, Ltd.), 394*
— — Marine, Two-Stage (Saunders Valve Co., Ltd.), 262*
— Circulating, Uskmouth Power Station, 555*
— High-Pressure, Automatically-Controlled (Howard Pneumatic Engineering Co., Ltd.), 26*
— — Pressure, Hand-Operated (Zwicky, Ltd.), 324*
— Horizontal, for Hot Liquids (Rhodes, Brydon & Youatt, Ltd.), 263*
— Hydraulic, Two-Stage, Hand-Operated (Chamberlain Industries, Ltd.), 64*
— Irrigation, Diesel-Drive (Ruston & Hornsby, Ltd.), 107*
— Vertical, for Hot Liquids (Rhodes, Brydon & Youatt, Ltd.), 263*
Pumping Engine, Cornish, in Cornwall, 339*, 371
— Machine, Vacuum, Automatic, for Fluorescent-Tube Manufacture, 380*
— Plant at Cardon Refinery, Venezuela, Model of (Sigmund Pumps, Ltd.), 394*
— — at Dovercourt Yeast Factory, 76*
— — Pickering Petroleum Storage and Distribution Depot, 250*
— — Singapore Power Station, 284. See *Erratum*, 384
Pumping Set and Electric Generator Combined (A. Lyon & Co. (Engineers), Ltd.), 790*
— — Petrol-Driven (J. Beresford & Sons, Ltd.), 108*
— Station, Stoke Newington, Dismantling of Beam Engines at, 501*
— — for Uskmouth Power Station, 552*
Purification of Water. See *Water*
Purifier, Oil (Alfa-Laval Co., Ltd.), 259*
Purlin, Angle, Behaviour of, Report on Investigations on, 286
Puttock, M. J., on Interferometer for Measuring Slip Gauges, 757*
Pyke, L., the Late, 756
"Pyramid" Petrol-Driven Motor Truck, 32*
Pyrites as New Source of Selenium, 569
Pyrotenax, Ltd., Hebburn Works of, 95

Q.

QUARRIES and Mines, Inspector's Report, 1951, 659
— Underwood, Somersetshire, Experimental Stone-Crushing Plant, 281*
Quasi-Arc Co., Ltd., Metal-Rectifier Welding Set, 324*; Single-Operator Welding Machine, 324*
Queen Mary College, London, Opening of Nuclear-Particle Laboratory, 91; Investigation of Pressure Rise in Spark-Ignition Engines, 135*
Queensland Government Railways, 1,500-h.p. Diesel-Electric Locomotive for, 172*
Quicksilver. See *Mercury*

R.

RACE, Nine-hour, Motor-car, Goodwood, 275
Radar Display Console, Marine (Cossor Radar, Ltd.), 323*
— Equipment, Long-Range (Kelvin & Hughes (Marine), Ltd.), 236*
— Meteorological Station, Automatic, Pease Pottage, Crawley, 299*
Radial Drill. See *Drill* under *Machine Tools*
Radiant Heating, Ltd., Portable Gas-Fired Furnace for Pipe Fabrication, 313*
Radiation, Solar, Physics of, 372, 377*, 409*
Radiator Compartment for 1,500-h.p. Diesel-Electric Locomotive, 172*
Radio Broadcasts, Sound and Television, of Coronation Ceremonies, Technical Arrangements for, 775
— Corporation of America, Tri-Colour Picture Tube of, 443*
— Loudspeaker Systems, Trends in Design of, 760
— Magnetic Tape Recording Equipment for Broadcast Programme, 381
— Meteorology, New Subject, Formation of, 316
— Research and Astronomy, 315
— — in Australia, 680
— — Board Annual Report, 241
— and Television Exhibition, National, 338.
— Transmission Surveys, Portable Aluminium-Alloy Mast for (Standard Telecommunications Laboratories, Ltd.), 127*
— See also *Telegraphy, Wireless; Telephony, Wireless; Television; Radar*
Radioactive Materials, Industrial Applications of, 157
— Substances, Contamination of Water Supplies by, 412
— Tracers, Use in Blast-Furnace Research, 116
Radiography, Tilting Table for (Watson & Sons (Electro-Medical), Ltd.), 224*
Radiovisor Parent, Ltd., Photo-Electric Units for High-Voltage Equipment, 648
Rafts, Inflatable, and Lifeboats, for Ships, 458, 465. See LETTERS, 532
Rail Ends, Milling of, Effect on Productivity, 299
— Ultrasonic Flaw Detector for (Branson Instruments, Inc.), 11*. See *Addendum*, 412
Railcars. See *Carriages, Railway*
Railroads. See *Railways*
Railway Accidents. See *Accidents*
— Bogies, Rubber Suspension of, 830*
— Bridges. See *Bridge*
— British, Decentralisation of, 20. See LETTER, 84; Report on Harrow-Wealdstone Collision, 49, 53. See LETTER, 147; Rolling Stock Programme, 51; Tests of Steam and Diesel Locomotives, 305; Standard 2-6-2 Tank Locomotive, 348*; Signal-Spectacle Glazing, 349*; 75-b.h.p. Diesel-Electric Mobile Crane, 395*; Crewe Pupils' and Premium Apprentices' Annual Dinner, 403; Teaching of Locomotive Driving and Firing Duties, 433; Effect of Transport Act, 1953, Abolishment of Railway Executive, 434; Booklet on Railway Civil Engineering as a Career, 435; Motive Power on, 439; Lancaster-Morecambe-Heysham Line, 50-Cycle Single-Phase Electrification, 459*; Research Department, Derby, Use of Electrical Resistance Strain Gauges on Concrete Structures, by J. C. Lucas and R. Newsham, 487; British Transport Commission Annual Report, 561; Wind Tunnel for Railway Research, 564; Electric Baggage Car for, 764; Tool for Deep-Level Grouting, 779*; Experimental Wagon of Aluminium Construction, 798
— Carriage. See *Carriage*
— Civil Engineering as a Career, Booklet on, 435
— Crossing, Cast-Steel (Edgar Allen & Co., Ltd.), 59*
— Executive, Abolishment of, 434
— Indian, Standard Locomotives 50 Years Ago, 801*
— Locomotive. See *Locomotive*
— Mauritius, 625-h.p. Diesel-Hydraulic Locomotives 651*

Railway Motor Carriage. See *Carriage*
— Netherlands, 2,958-h.p. Electric Locomotives, 65*
— New South Wales Government, 1,000-h.p. Diesel Electric Locomotive for, 139*. See *Addendum*, 212; Electronic Arc Suppression in Traction Rectifiers, 773
— New Zealand Government, 1,500-h.p. Diesel-Electric Traction Set for, 354*
— Nyasaland, Ltd., 500-ton Floating Dock on Lake Nyasa, 300*; Aluminium Wagon for, 798
— Queensland Government, 1,500-h.p. Diesel-Electric Locomotive for, 172*
— Research, Wind Tunnel for, Derby, 564
— Rolling Stock. See also *Carriages; Locomotives; Wagons*
— Signalling. See *Signalling*
— Staffs, Disputes over Wages, 787
— Station Roofs, Inspection Ladder for (Merryweather & Sons, Ltd.), 118*
— Street. See *Tramways*
— Swiss Federal. Riding Control for Bogie of 6,000-h.p. Electric Locomotive, 285*
— Tube. See *Underground; London Transport Executive*
— Underground. See *Underground; London Transport Executive*
— United, States, Rail-End Technique in, 299
— Wagons. See *Wagons*
— See also PARAGRAPH INDEX
Rait, Dr. J. R., on Design of Creep-Resisting Steels, 505*, 537*. See 455
Rake, Side-Delivery, Front-Mounted (A. B. Blanch & Co., Ltd.), 85*
Ransome & Marles Bearing Co., Ltd., Annfield Plain Ball-Bearing Factory, 467, 555
Ransomes, Sims & Jefferies, Ltd., Petrol-Driven Hoe, 45*; Tractor-Driven Combine Harvester, 85*; Reversible Disc Plough, 811*
Raskin Works, 100-ton Power Press with Presse Brake Attachment, 124*
Rattee, S. G., the Late, 51
Rawlings, W. R., the Late, 621
Ray-Tyler Engineering Co., Ltd., Hydraulic Copying Attachment for Lathes, 235*
— See *X-Rays*
Reactor, Nuclear, Function of, 345, 372
— Thermal, for Atomic Power Stations, 593
Readhead, Lady, the Late, 590
Reading, Receivers for Broadcast Monitoring Service, 137*
Rear Drive and Front Suspension of Volkswagen Car, 535*
— — and Suspension, Lancia "Aurelia" Car, 565*
— — and Suspension of Spanish "Pegaso" Car, 566*
— Suspension of A.C. Ace Motor, Car, 566*
Receivers, Hot-Metal, for Iron Foundries (Monometer Manufacturing Co., Ltd.), 27*
— Telemetry for Guided Weapons, 518*
Reclamation of Land in Northern India and Pakistan, 233
Record Electrical Co., Ltd., Indicator for Large Universal Boring Mill, 451*
Recorder, High-Speed (Dobbie McInnes, Ltd.), 391*
— Miniature for Process Control (Evershed & Vignoles, Ltd.), 290*
Recording Equipment, Magnetic Tape, for British Broadcasting Corporation, 381
Rectifiers. See *Electric*
Redpath, Brown & Co., Ltd., Development of London Airport, 397*
Reduction Gears. *See Gears; Marine Propulsion*
Redux-Bonded Wing Skin for Aircraft (Short Brothers, & Harland, Ltd.), 405
Reeling Machine for Seamless-Tube Manufacture, 163*
Rees *versus* B. Hastie & Co., Ltd., Legal Decision on, 179
Rees, W. P., on Intergranular Brittleness in Iron-Oxygen Alloys, 772; on Properties of High-Purity Iron Alloys, 773
Reference Books. See *Annuals*
Refinery, Cardon, Venezuela, Model of Pumping Plant at (Sigmund Pumps, Ltd.), 394*
Refining, Oil, in Europe, Report on, 210
Refrigerating Plant at Aycliffe Factory of Bakelite, Ltd., 715*
— — at Ice-Cream Factory of T. Wall & Sons, Ltd., (Lightfoot Refrigeration Co., Ltd.), 502*
— Unit for Aircraft Cabins (de Havilland Propellers, Ltd.), 215*
Refuse Disposal Plant, Sheffield (Heenan & Froude, Ltd.), 633*
Regenerative Furnace. See *Furnace*
Regulator, Askania, for Control of Blast-Furnace Blowers, 762*
Reheating Furnace. See *Furnace*
Reinforced Concrete. See *Concrete*
Reinforcements for Concrete Roads, 724
Relaxation Methods: A Retrospect, 691
Relay for Control of Reactive Power (Chamberlain & Hookham, Ltd.), 671*
— Protective and Auxiliary (English Electric Co., Ltd.), 768*
Remote-Control Cabinet, Hydraulic (Automotive Products Co., Ltd.), 394*
Report, Ammunition Productivity in United States, 17
— on Air Pollution and Its Prevention, 747
— Annual, Advisory Council on Scientific Policy, 113
— — Association of Consulting Engineers, 63
— — Astronomer Royal's, 125, 211
— — Australian Commonwealth Scientific and Industrial Research Organisation, 679
— — British Coal Utilisation Research Association, 88
— — British Council, 627
— — British Electricity Authority, 466
— — British European Airways, 467
— — British Independent Air Transport Association, 746
— — British Transport Commission, 561
Report, Annual, British Welding Research Association, 114
— — Chemistry Research Board and Laboratory, 428, 434
— — Chief Inspector of Alkali, etc., Works, 266
— — Chief Inspector of Mines, 242
— — Fire Research Station, 83
— — Forest Products Research Board, 337
— — Fuel Research Board, 145
— — Gas Council, 586
— — Glasgow Corporation Water Department, 275
— — Hydraulics Research Board, 18
— — Mechanical Engineering Research Board, 209
— — National Dock Labour Board, 114
— — National Research Development Corporation, 818
— — Professional Classes Aid Council, 147
— — Radio Research Board, 241
— — Research on Safety in Mines, 626
— — Road Research Board, 177
— — Royal Scottish Museum, Edinburgh, 83
— — South Africa Electricity Supply Commission, 532
— — Tin Research Institute, 83
— Board of Trade, on British Industries Fair, 721
— Coal Position in Europe, 1952-53, 146
— Co-ordination of Oil-Refining in Europe, 210
— Economic Utilisation of Copper-Base Alloys, 222
— Economy in Construction of Power Stations, 498
— Employment of Older Men and Women, 563
— European Coal Position, 1952-53, 146
— — Oil-Refining Co-ordination, 210
— — Water Power, 178
— on Fuel Efficiency Organisation, 29
— Graduate Teachers of Mathematics and Science, 754
— Harrow-Wealdstone Railway Collision, 49, 53. See LETTER, 147
— Interim, Committee on Coastal Flooding, 211
— Materials Handling Equipment and Methods in United States, 369
— Mines and Quarries, Inspector's, 1951, 659
— Oil-Refining Co-ordination in Europe, 210
— Operating Range of Electronic Flame-Failure Devices, 171
— Power-Station Construction, Economy, 498
— Productivity, on Fuel Conservation, 338
— — Teams', on Machine-Tool Industry, Comments on, 10
— S.S. "Ocean Vulcan" Sea Trials (Review), 165
— State of Sailing Ship, "Cutty Sark," 337
— Teaching and Practice of Production Management in United States, 689. See *Addenda*, 813. See LETTER, 756
— Technical College Education, 307
— Television Advisory Committee and Frequency Allocation, 81
— Water Power in Europe, 178
— See also *Board of Trade*
Research on Applications of Solar Energy, 372, 377*, 409*
— Association, Cast Iron, British, Pneumatic Clamp for Shell Moulds, 296*; Annual Report, 586
— — Coal Utilisation, British, Opening of New Laboratory, 20; Investigation on Combustion in Boiler with Chain Grate, 61; Annual Report, 88; Annual Luncheon, 563
— — Gearing, Admiralty-Vickers, Significance of Izod Test in Gear Design, 166*
— — Hydromechanics, British, Feeder for Hydraulic Transport of Coal, 296*
— — Internal Combustion Engine, British, Luncheon, 83; Demonstration and Open Days, 607*
— — Iron and Steel, British, North-East Coast Laboratories, 116*; Sheffield Laboratories of, 683*
— — Motor Industry, Lindley High-Speed Test Track, 74
— — Steel Castings, British, Liquid-Metal Sampling Apparatus, 735*
— — Watch, Inauguration of, 725
— — Welding, British, Annual Report, 114
— Board, Forest Products, Annual Report, 337
— — Fuel, Annual Report, 145
— — Hydraulics, Annual Report, 18
— — Mechanical Engineering, Annual Report, 209
— — Radio, Annual Report, 241
— — Road, Annual Report, 177
— on Circuit Breaking (Review), 644
— Department, British Railways, Derby, Use of Electrical Resistance Strain Gauges on Concrete Structures, by J. C. Lucas and R. Newsham, 487; Wind Tunnel for, Derby, 564
— — Scientific and Industrial, Exhibits at Engineering, Marine and Welding Exhibition, 296
— and Design Building of C. A. Parsons & Co., Ltd., 713*
— — Corporation, National, Annual Report, 818
— Engine, on Fuels and Lubricants, 37*
— Establishment, Atomic Energy, Harwell, Economics of Nuclear Power Schemes, 345*, 372. See *Erratum*, 375
— — Naval Construction, Testing Frame for Ships' Structures, 115*
— Fellowships Tenable in United States, 403
— Flame-Radiation, International, at Ijmuiden, 488, 555*
— Hydromechanics, by United States Navy, 584
— Industrial, Use of Radioactive Materials in, 157
— Laboratories, Aircraft (Handley Page, Ltd.), 150*
— — Chemical, Work of 2nd Annual Report, 428, 434; Investigation on New Sources of Selenium, 569
Research Laboratories, Fluid Mechanics and Combustion, of Brown, Boveri & Co., Ltd., 609*
— — Hydraulic, for Docks and Inland Waterways Executive, 120, 138*. See LETTER, 212
— — Industrial, Birmingham, Tests of Wire-Rope Grips, 734*
— — Mechanical Engineering, Equipment for Compression-Creep Tests at High Temperatures, by Dr. A. E. Johnson and N. E. Frost, 26*
— — Road, Experimental Stone-Crushing Plant, 281*; Surface Dressings for Protecting Soil Formation, by W. A. Lewis, 793*
— Nuclear, European Organisation for, Establishment of, 179
— Organisation, Australian, Commonwealth Scientific and Industrial, Annual Report, 679
— — Fire, Joint, Exhibits at Building Exhibition, 727
— — Industrial, Conference on Technological Education, 723
— and Production in Engineering, 594
— Radio, and Astronomy, 31
— Railway, Use of Electrical Resistance Strain Gauges on Concrete Structures, 487; Wind Tunnel for, Derby, 564
— on Safety in Mines, Annual Report on, 626
— Scientific, Value to Industry, 113
— on Soil-Cement and Concrete Roads, 681, 724
— Station, Building, Vibrating-Wire Strain Gauge for Tests on Structures, by R. J. Mainstone, 153*; Researches on Heating in Buildings, 422; Exhibits at Building Exhibition, 727
— — Fire, Annual Report, 83
— — Fuel, Fischer-Tropsch Experimental Plant, 296, 297
— Welding, in British Merchant Shipbuilding, 639
— See also *National Physical Laboratory*
Reservoir, Blithfield, 598*
— Irrigation, in United States, Sediment Problems in, 1*
— on Julia River, Zürich, 129*
— Stratification and "Overturn" in, 821
Resin for Shell Moulding Process, 251, 285
Resistance Welding. See *Welding*
Resonance, Ground, of Helicopters, 779
Reviews. See LITERATURE INDEX
"Revolving" Fund for Industry, 243
Reyrolle, A., & Co., Ltd., Hebburn Works of, 93; 750-MVA 33-kV Circuit-Breaker Switchgear, 264*; Switchgear for Singapore Power Station, 284
Rheem Lysaght, Ltd., Printing and Roller Coating Machines for Steel Sheet, 779*
Rhodes, Brydon & Youatt, Ltd., Vertical Pump for Hot Liquids, 263*; Horizontal Pump for Hot Liquids, 263*
Rhodie, R. V., on Fatigue of Aeroplane Structures, 423
Richards, A. D., on Stresses in Curved Beam, 103*
Richards Bros. & Sons, Ltd., Pressing Shop for Cutlery, 91*
Richardson, Lieut.-Col. Sir P. Wigham, the Late, 718
Richardsons, Westgarth & Co., Ltd., Hartlepool Works of, 94
Riddles, R. A., Award of Gold Medal of Institution of Locomotive Engineers to, 51; Standard 2-6-2 Tank Locomotive, 348*
Rietz Manufacturing Co., Laboratory and Industrial Disintegrator, 832*
Rigg, Dr. J. G., on Priming Paints for Light Alloys, 470
Riley "Pathfinder" Motor Car, 588*
Ring Motors, Ltd., Portable Spot Welder, 352*
— Piston. See *Piston Rings*
Ripley, L., the Late, 500
Ripper, Prof. W., Work on Craftsmanship Training, 531, 533
Risley, Work of Atomic Energy Research Establishment at, 593
River Albula, Zürich Hydro-Electric Station on, 129*
— Calder, and Aire and Calder Canal, Thermo-Hydraulic Model of, 138. SEE LETTER, 212
— Clyde, Projected Tunnel under, 361
— Colorado, Rock Fill Weir on, 4*
— Dee and Bala Lake Improvement Scheme, 412
— International, European, Electric Development on, 141
— Investigations by Hydraulics Research Board, 18
— Julia Zürich, Hydro-Electric Stations on, 129*
— Severn, Model of, at Bull's Bridge Research Laboratory, 120, 138*. See LETTER, 212
— Thames, Dartford-Purfleet Tunnel under, 361; Scheme for Development of South Bank, London, 532
Rivets, Aluminium, Large, Point Shapes for, Investigations on, 513*
— Heater, 16-kW. Electric, Twin-Head (Holden & Hunt, Ltd.), 291*
Road Construction, Concrete, and Soil-Cement, 681, 724
— — Ministry of Transport Statement, 785
— Gradient, Effect of Fuel Consumption and Speed of Motor Vehicles, 44
— Making Machinery, Types of, 681
— Research Board Annual Report, 177
— — Laboratory, Experimental Stone-Crushing Plant, 281*; Surface Dressings for Protecting Soil Formations, by W. A. Lewis, 793*
— Roller, 10-ton Steam, Aveling and Porter, Ltd., 214*
— — To Tractor Conversion Chassis (E. V. Twose, Ltd.), 105*
— Soil, Surface Dressings for, 793*
— Transport and Commercial-Motor Manufacturers, Spurrier Lecture, 821
Roads, See also *Tar*
Robertson, General Sir B., Appointment of as Chairman of British Transport Commission, 243
Robertson, T. S., on Test for Notch Ductility, 71
Robertson, W. H. A., & Co., Ltd., Rolling Mill at Shepcote Lane Works, Sheffield, 333*, 363*. See LETTER, 436*; Planetary Rolling Mill for Steel Strip, 543*; Cold Strip-Rolling Mill for Research Work, 683*
Robinson's South Crofty Mine, Redruth, Cornish Shaft Engine at, 342*
Robson, J. T., the Late, 302
Rock-Drill Manufacture, by Atlas Diesel Co., Sweden, 641*
Rocket Aids for Conductor Stringing, 114
— and Comet Orbits, Tables for (Review), 613
— Exploration of Upper Atmosphere, Conference on, 360
— Guided, British, Progress with, 274
— Motor "Super Sprite" (de Havilland Engine Co., Ltd.), 406*
Rockweld, Ltd., Multi-Operator Welding Transformer and Regulators, 262*
Rockwell Machine Tool Co., Ltd., "Victomatic" Milling Machine, 25*; Strip-Feeding Machines, 279*
— Tests. See *Hardness* under *Tests* (*Materials*)
Rods and Forgings, Aluminium-Bronze, Specification, 768
Rodgers, W, on Techniques in Motion and Time Study, 390
Roe, A. V., & Co., Ltd., "Avro" Delta-Wing Aircraft, 374*
Roe, C. H., Ltd., Single-Deck High-Speed Tramcars, 124*. See 254*. See *Erratum*, 199
Roebuck, A., on Training of Mechanical Engineers and Craftsmen, 533. See 531
Rolls, Blade-Forging (Morgan Fairest, Ltd.), 58*
— Crushing, for Ironstone (Hadfields Ltd.) 59*
Roller Bearings. See *Bearings*
— Coating and Printing Machines for Steel Sheets, 779*
— Road. See *Road Roller*
—-to-Tractor Conversion Chassis (E. V. Twose, Ltd.), 105*
Rolling Mills (Davy & United Engineering Co., Ltd.), 59*
— — Planetary, for Steel Strip (Ductile Steels, Ltd.), 545*
— — Reversing, for Alloy Steels (Brightside Foundry & Engineering Co., Ltd.), 59*
— — Sendzimir, for Strip (A. Lee & Sons, Ltd.), 91*
— — at Shepcote Lane Works of Firth-Vickers Stainless Steels, Ltd., 332*, 362.* See LETTER, 436*
— — Strip, Cold (W. H. A. Robertson & Co., Ltd.), 683*
— Stock Programme, British Railways, 51
— — See also *Carriages; Locomotives; Wagons*
"Rollrite" Thread-Rolling Diehead, 683*
Rolls-Royce Ltd., 130-b.h.p. Oil-Engined Electric Generator, 265*; Oil-Engine Power Pack, 265*; "Canberra" Flying Test-Bed, 406; "Avon" R. A. 14 Jet Engine, 406*; 5,400-b.h.p.Gas Turbine for H.M.S. "Grey Goose," 673*; Aero-Engine Factory at East Kilbride, 717*
Roman City of Sabratha, Lybia, "Concrete" from, 756*
Röntgen Rays. See *X-Rays*
Roofs and Floors, Concrete, Supports for Shuttering for (Blaw Knox, Ltd.), 447*
— Railway-Station, Inspection Ladder for (Merryweather & Sons, Ltd.), 118*
— Reinforced-Concrete, for Stockwell Omnibus Garage, 703*
— Support in Mines, Experiments on, 242
Ropes, Wire. See *Wire Ropes*
Rosenhead, L., on Webb's Approximation of Sec θ, 298
Rostowrack Cornish Engine, 341*, 371
Rotary Blowers. See *Blowers; Turbo-Blowers*
— Engine. See *Engines; Aeronautics*
— Pump. See *Pump*
Rotax, Ltd., Factory Building of Tubular Construction, 617*
Rotol Ltd., Variable-Pitch Marine Propeller, 582*; Air-Turbine Accessory Drives for Aircraft, 777
Rotor, Alternator, Balancing Machine for (C. Schenck, G.m.b.H.), 523*
— for 15,000-kVA. Generator, 131*
— High-Pressure, for 60-MW. Steam Turbine (C. A. Parsons & Co., Ltd.), 264*
Royal Aeronautical Society. See *Aeronautical*
— Agricultural Society. See *Agricultural*
— Air Force. See *Aeronautics*
— Aircraft Establishment. See *Aeronautics*
— Canadian Navy, Motor Launch for, 301*
— Ceylon Navy, Motor Launch for, 301*
— Greenwich Observatory, Herstmonceux, Astronomer Royal's Report, 125, 211
— Liver Building, Liverpool, Electronic Chiming Installation for Clock, 664
— Mail Liner, "Andes," Stabilisers of, 491
— Military College of Science, Determination of Stresses in Curved Beam, 103*
— Scottish Museum, Edinburgh, Annual Report, 83

Royal Society:
Appointment of Research Studentships and Scholarships, 139
Joint Initiation of Commonwealth Bursaries in Science with Nuffield Foundation, 147
Conference on Rocket Exploration of Upper Atmosphere, 360
Research Fellowships Tenable in United States, 403

Royal Society of Arts. See *Arts*
— Yacht, "Britannia," Preliminary Trials 622
R. P. R. Patents, Ltd., Minchom-Sempun Magnetic Flaw Detector, 736*

Rubber under Cyclic Compression, Machine for Measuring Load and Deformation 196*
— Raw, Methods of Testing, Specification, 798
— and Synthetic Rubber Manufacturing Industry, 692
— Unvulcanised, Compounded, Methods of Testing, Specification, 798
Rudder-Angle Indicator (Smith's Industrial Instruments, Ltd.), 325*
— — Transmitter (Smith's Industrial Instruments, Ltd.), 325*
Rugby Engineering Society, Jubilee of, 532
— Works, British Thomson-Houston Co., Ltd., Heavy Machine Shop, 97*
Russell, J. E., on Izod Test in Gear Design and Performance, 166*
Russell, Newbery & Co., Ltd., 8-h.p. Single-Cylinder Diesel Engine with Centrifugal Pump, 95*
Russian Book on Cathodic Protection (Review), 659
Rusting. See *Corrosion*
Ruston & Hornsby, Ltd., 750/1,000-kW. Gas Turbine, 11; Diesel-Driven Irrigation Pump, 107*; 1,125-b.h.p. Twelve-Cylinder Diesel Engine, 262*; 1,260-h.p. Industrial Gas Turbine, 358*
Ryaland (Manchester), Ltd., Accelerator Pump for Central-Heating Systems, 287*
Rye-Arc, Ltd., Reinforced-Concrete Workshop, 93*

S.

SABRATHA, Roman City, Lybia, "Concrete" from, 756*
Safety Device for Torque Overload (Tiltman Langley Laboratories, Ltd.), 682*
— Lamps, 150-Watt Pneumatic Miner's Lamp (Atlas Diesel Co.), 643*
— of Life at Sea. See *Life-Saving*
— in Mines, Chief Inspector's Report, 242
— in Mines, Research on, Annual Report, on, 626
— Road, Work of Road Research Board on, 177
Sailing Ship "Cutty Sark". Report on, State of, 337
Saint. See *St.*
Salford Electrical Instruments, Ltd., System for Remote Indication of Measurements, 672*
"Salisbury," H.M. Aircraft-Direction Frigate, Launch of, 13*
Salisbury Precision Engineering, Ltd., Optical Follower for Milling Machine, 425*
Salmon, Dr. E. H., 500-ton Floating Dock on Lake Nyasa, 200*
Salon, Paris, Air. See *Exhibition*
Salopian Engineers, Ltd., "Cheshire" Petrol-Driven Trench Digger, 106*; Cantilever Traction Attachment for Tractor, 745*; Power-Driven Baling Machines, 746*
Salvage Work on Wrecked French Destroyer "Maillé Brézé," 608
Sambrook, K. H., on Smokeless Combustion of Fuel Oils, 498
"Samoa," M.S., Cargo Liner, 217*
Sampling Apparatus, Liquid-Metal, 735*
Sand Drying and Filling Plant for Pipe Bending (Foundry Equipment, Ltd.), 313*
— Preparation Plant, Millspaugh Centrifugal-Casting Foundry, 594, 629*
— for Shell Moulding Process, 251, 285
Sanderson Bros. & Newbould, Ltd., Heliocentric Speed Reduction Gear, 59*; Tensioning of Band Saws, 57*
Sandhole Colliery, 62-h.p. Electric Locomotive with Overhead Conductor, 279*
Santa Massenza Hydro-Electric Plant, 269*
Sapcote Junction, Leicestershire, Experiments on Surface Dressings for Soil Road, 793
Sarjant, Prof. R. J., on Space Heating, 61
Sarjeant, C. J., the Late, 622
Saunders-Roe, Ltd., Pulse-Jet Aero Engine for Helicopters, 319*; "Princess" Flying Boat at High Altitudes, 331*; Future of "Princess" Flying Boat, 853
Saunders-Roe (Anglesey), Ltd., All-Welded Aluminium-Alloy Motor Yacht "Morag Mhor," 180*
Saunders Valve Co., Ltd., Two-Stage Marine Centrifugal Pump, 262*; Ebonite Diaphragm Valve, 263*
Saws. See *Machine Tools*
Sawmill, Mobile (Etablissement C.D.), 776*
Saxton, W. H., the Late, 494
"S.B.5" Adjustable-Wing Research Aircraft, 375*
Scammell Lorries, Ltd., Motor Lorry for Bulk Transport of Carbon Black, 429*
Schairer, G.S., on Pod Mounting of Jet Engines, 453
Schenck, C., G.m.b.H., Balancing Machine for Alternator Rotors, 523*
"Schenectady," Oil Tanker, Failure of, 70, 187
Scholarships. See *Education*
Schools, Heating of, Investigations on, 422
Science and Mathematics, Graduate Teachers of, Report, 754
— Museum, South Kensington, Booklet on "Conquest of the Air," 818
— for Its Own Sake, 315, 343
— in United States during 1951–52, Report on, 690
Scientific Management. See *Works Management*
— Policy, Advisory Council on, Annual Report, 113
— Research. See *Research*
— Societies. See *Institutions*
Scientists and Technologists, Industrial, Advanced Short Courses for, 307
Scintillation Counter and Luminescence (Review), 644
Scott, G., & Son (London), Ltd., Laboratory and Industrial Disintegrator, 832*
Scotland, Aero-Engine Factory at East Kilbride, 717*
Scotland, Institution of Engineers and Shipbuilders in. See *Engineers*
— North, Hydro-Electric Board, Slag Cement Plant at Cluanie Dam, 557*. See *Erratum*, 640
— Notes from, 14, 46, 78, 110, 142, 174, 206, 238, 270, 302, 334, 366, 398, 430, 462, 494, 526, 558, 590, 622, 654, 686, 718, 750, 782, 814. See PARAGRAPH INDEX
Scottish Aviation, Twin Pioneer Air Liner, 471
— Council (Development and Industry), Mission to North America, 819
Scottish Diatomite, Ltd., Diatomite Industry in Isle of Skye, 444
Scottish Mechanical Light Industries, Ltd., Tractor-Mounted Transport Platform, 45*; Multi-Bagging Unit, 791*; Electric Hammer Mill, 791*
— Museum, Royal, Edinburgh, Annual Report, 83
Screen, Vibratory, for Stone-Crushing Plant, 281*
Screw, Machine, Unified, Specification, 512
— Nuts and Bolts, Black, Specification, 606
— Propellers. See *Propellers; Aeronautics*
"Sea Mew" Anti-Submarine Aircraft, 375*
— Waves, Calming by Pneumatic Breakwater, 120, 138*. See LETTER, 212
Seaplanes. See *Aeronautics*
Searchlights, Marine (C.A.V., Ltd.), 326*
Seat, Ejector, Lightweight, for Aircraft, 685
Section, Shipbuilding, Optical marking-off System for, 486, 570*
Sediment Problems in Irrigation Projects in United States, 1*
Seed-Spacing Drill (Stanhay (Ashford), Ltd.), 105*
Seeder and Cultivator, Combined (H. Ferguson, Ltd.), 86*
Sefton Substation, New South Wales, Electronic Arc Suppression in Traction Rectifiers, 773
Seifert, Col. R., Reinforced-Concrete Workshop, 93*
Selenium, New Source of, Investigation of, 569
Self-Changing Gears, Ltd., Epicyclic Gearbox without Clutch Pedal, 694*
Sendzimir, Ltd., Rolling Mill for Strip, 91*; Cold-Rolling Mill, Shepcote Lane Works, Sheffield, 333*, 363*; Planetary Hot-Rolling Mill for Steel Strip, 545*
Sentinel (Shrewsbury), Ltd., "Power Pack" 60-h.p. Diesel Engine, 392*
Separator, Centrifugal, at Dovercourt Yeast Factory, 77*
Service Aviation. See *Aeronautics*
"Setter IX," Whale Catcher, Model of Machinery for (National Gas and Oil Engine Co., Ltd.), 357*
Severn, River, Model of, at Bull's Bridge Research Laboratory, 120, 138*. See LETTER, 212
"Sfindex," Société, Annular Flow Guide Vanes for Water Turbines, 550*
Shaft, Crank. See *Crankshaft*
— and Holes, Fitting of. See *Gauges*
Shardlow, A., & Co., Ltd., Vertical Crankpin-Turning Machine, 59*
Sharp, F. C., on Shepcote-Lane Plant of Firth-Vickers Stainless Steels, Ltd., 436*. See 332*, 362*
Sharples Centrifuges, Ltd., Centrifuge for Heavy Fuel Oils, 798*
Shaw, A. G., on Use of Motion Study in Increasing Productivity, 390
Shaw, S. E., on Unified Boiler Control at Trafford Power Station, 676*
Shear Tests. See *Tests (Materials)*
Shearing Machine. See *Machine Tools*
Shed, Storage, of Timber Construction, Victoria Docks, Hull, 796*
— Store for Grain Silo at Dublin, 577*
Sheet Material, Side-Register Control Equipment for Reeling of (Ferranti, Ltd.), 669*
— Metal, Stretcher-Strain Markings in, Methods of Measuring, 439
— Steel, Printed, Drying Oven for (Stordy Engineering, Ltd.), 779*
— and Strip Metal Users' Technical Association, Conference on Hardness Testing of Steel, Sheffield, Programme, 314
Sheffield, Aising Road Works, Millspaugh Centrifugal-Casting Foundry, 594, 629*
— City Council, Refuse-Disposal Plant, 633*
— Conference on Hardness Testing of Steel, Programme, 314
— Craftsmanship Training at, 531, 533
— Laboratories of British Iron and Steel Research Association, 683*
— Metallurgical Industries, 89*
— Shepcote Lane Plant of Firth-Vickers Stainless Steels, Ltd., 332*, 362*. See LETTER, 436*
Shell-Mex and B.P., Ltd., Petroleum-Storage Depot, Pickering, 250*; Piston-Ring Wear Measuring Plant, 395*
— Moulds, Pneumatic Clamp for, 296*
— Moulding Process, Introduction and Appreciation, 251, 285
Shell Tankers, Ltd., Triple-Screw Motor Launch, 680*
Shepcote Lane Plant of Firth-Vickers Stainless Steels, Ltd., 332*, 362*. See LETTER, 436*
Shepheard, R. B., on Welding Research in British Merchant Shipbuilding, 639. See 586
Shepherd, F., & Son, Ltd., Laminated-Wood Silo for Cement, 109*
Shepherd-Barron, W. P., on London Docks, 637
Sheppard & Sons, Ltd., Continuous Casting Machine for Copper Ingots, 809*
"Sherpa" Research Aircraft with Aero-Isoclinic Wing, 544*, 749*
Ship Canal. See *Canal*
— Under Construction, Lloyd's Statistics, 137, 562
— Defects, Investigations on, 628
— Diesel-Engined. See *Motorships; Marine Propulsion*
— Electrical Propulsion. See *Marine Propulsion*
Ship Launching. See *Launching*
— Lifeboats and Inflatable Rafts, 458, 465. See LETTER, 532
— Model Experiments. See *Tank Experiments*
— Motor. See *Motorships; Marine Propulsion*
— Plates, Brittle Fracture of, 70, 187, 220, 639
— Propellers. See *Propellers*
— Propulsion. See *Marine Propulsion; Engines; Turbines; Propellers*
— Salvage of. See *Salvage*
— Structures, Testing Frame for, 115*
— for Transport of Motor Vehicles and Railway Wagons, 522
— Wooden, Causes of Deterioration in, 337
— See also *Marine; Motorships; Shipping; Steamers; Warships;* and PARAGRAPH INDEX
Shipbuilders and Engineers in Scotland, Institution of. See *Engineers*
Shipbuilding, All-Welded Aluminium-Alloy Motor Yacht "Morag Mhor," 180*
— Aluminium Fishing Cruiser "Gay Jane," 777*
— British Merchant, Welding Research in, 639
— Brittle Fracture in Ship Plates, 70, 187, 220, 639
— Launching Greases, Tests of, 468
— Launches and Trial Trips of Ships, 15, 47, 79, 111, 159, 187, 207, 248, 303, 335, 472, 540, 601, 670, 732, 799, 826
— Naval. See *Warships*
— S.S. "Ocean Vulcan," Sea Trials (Review), 165
— Oil Tanker "Helix," 619*
— Optical Marking-off System for Plates and Sections, 486, 570*
— M.S. "Pavia," Cunard Cargo Liner, 92*
— M.S. "Samoa," 217*
— Vessels Under Construction, Lloyd's Statistics, 137, 562
— S.S. "Vigilant," 158*
— Yards Using Optical Marking-off Methods, 486, 571
— See also *Steamers; Naval; Warships* and PARAGRAPH INDEX
Shipyard. See *Shipbuilding Yard*
Shock Tests. See *Impact Tests* under *Tests (Materials)*
Shop Management. See *Works Management*
Short Brothers and Harland, Ltd., "Sea Mew" Anti-Submarine Aircraft, 375*; "S.B.5" Adjustable-Wing Research Aircraft, 375*; Machined Box-Spar for Aircraft Construction, 404*; Redux-Bonded Wing-Skin Aircraft Construction, 405; Analogue Computor, 477*; "Sherpa" Research Aircraft with Aero-Isoclinic Wing, 544*, 749*
Show. See *Exhibition*
Shredder, Stalk and Weed (Steel Fabricators (Cardiff), Ltd.), 811*
Shrink-Fit Calculations, Design Aid for, 228*
Shuman-Boys Solar Boiler at Meadi, Cairo, 380*
Shuttering for Concrete Floors and Roofs, Supports for (Blaw Knox, Ltd.), 447*
Sickla Works, Stockholm, of Atlas Diesel Co., 641*
Siddons, R. A., the Late, 78
Siebe, Gorman & Co., Ltd., Marconi-Siebe Gorman Underwater Television Camera, 358*
Siemens Brothers & Co., Ltd., West Hartlepool Works of, 94
— Martin Furnaces. See *Furnaces*
Siemens, Sir W., Collection of Letters to, 730
Sigma Instrument Co., Ltd., Comparators and Linear Measuring Instruments, 523
"Sigmatest" Conductivity Meter, 293*
Sigmund Pumps, Ltd., Centrifugal Pump, 394*; Model of Pumping Plant at Cardon Refinery, Venezuela, 394*
Signal-Spectacle Glazing, British Railways, 349*
Silentbloc, Ltd., "Vibrex" Panel Fasteners, 827*
"Silester" for Foundry Use, 239
Silo, Grain, Prestressed-Concrete, at Dublin, 577*
— Laminated-Wood, for Cement (F. Shepherd & Son, Ltd.), 109*
Siloators, Ltd., Forage Harvester, 44*
Silver City Airways, Ltd., Cross-Channel Car-Ferry Air Services of, 169*
Silversmith Work (J. Dixon & Sons, Ltd.), 91*
Simpson, J., & Co., Beam Pumping Engines of, 501*
Simpson, J., the Late, 494
Sims, R. F., on Wear of Carbon Brushes at High Altitudes, 726
Singapore, Pasir Panjang Power Station, 283
Sintering in Iron and Steel Industry, Researches on, 116
— Symposium on, Iron and Steel Institute. See Vol. 177
Skerrey, E. W., on Priming Paints for Light Alloys, 470
Skye, Isle of, Diatomite Industry of, 444
Slab, Concrete, with Reinforced Circular Hole, Stresses in, 808*
Slag. See *Metallurgy*
Sling, Wire-Rope, Braided (British Ropes, Ltd.), 357*
Smale, J. A., on Commonwealth Telecommunications, 602
Smelting Furnaces. See *Furnaces*
Smith, C. C., on Administrative Problems in Public Lighting, 370
Smith, Engr.-Capt. E. C. on Centenary of D. F. J. Arago, 436; on W. Gilbert, 819. See 755
Smith, F. S., the Late, 490
Smith, Prof. S. P., the Late, 276
Smithfield Show and Agricultural Machinery Exhibition, 745*, 790*, 810*
Smith's Industrial Instruments, Ltd., Rudder-Angle Transmitter, 325*; Rudder-Angle Indicator, 325*; Speed Control Switch, 325*
Smoke Abatement and Atmospheric Pollution, 497
Smoke Abatement, Legislation on, 787
— — Society, National, Smokeless Zones in Industrial Cities, by A. Marsh, 83. See 498; North-Western Division: Air Pollution and the Law, by A. Marsh, 787
— Emission and Atmospheric Pollution, 747
Smokeless Zones in Industrial Cities and Towns, 83, 498
Snow & Co., Ltd., Heavy-Duty Precision Grinding Machine, 58*
— Removal, Work of Road Research Board on, 178
Société Financière d'Expansion Commerciale et Industrielle S.A. "Sfindex," Annular-Flow Guide Vanes for Water Turbines, 550*
— Industrielle pour l'Aéronautique, "Minijet" Training Aircraft, 44*
Society of Motor Manufacturers and Traders. See *Motor*
— Technical and Scientific. See *Institutions*
— Trade. See *Labour; Labour Notes;* PARAGRAPH INDEX
Soete, Prof. W., on Brittle Fracture and Notched Bend Tests, 71
Softener, Water. See *Water*
Soil-Cement and Concrete-Road Construction, 681, 724
— Compactor, Vibratory, Diesel-Engined (A.B. Vibro-Verken), 60*
— Formations, Surface Dressings for Protecting, 793*
— Stabilised, Tests for, Standard Methods of, 60
Solar Energy: Past, Present and Future Applications, 372, 377*, 409*
— — Possibilities of, 382
— Observations at Royal Observatories, 125, 211
Solus-Schall, Ltd., Mobile Fluoroscopy Unit, 293*; "Sigmatest" Conductivity Meter, 293*; Isotope Containers, 293
Somersetshire, Underwood Quarry, Experimental Stone-Crushing Plant, 281*
Soot-Blower, "Air-Puff" (Babcock & Wilcox, Ltd.), 393*
Sound Broadcasting by British Broadcasting Corporation, 499, 543, 573
— and Television Broadcasts of Coronation Ceremonies, Technical Arrangements for, 775
South Africa, Coalbrook Fischer-Tropsch Plant, 297
— — Electricity Supply Commission, Annual Report, 532
— African Railways and Harbours Administration, Model of Table Bay Harbour, 245*, 267*
— Bank, River Thames, London, Scheme for Development of, 532
— India, Tunnels for Machkund Hydro-Electric Scheme, 683
— Kensington, Science Museum, Booklet on "Conquest of the Air," 818
South Staffordshire Waterworks Co., Blithfield Reservoir, 598*
— Wales, Abernant Colliery Project, 243
— West England and South Wales, Notes from, 14, 46, 78, 110, 142, 174, 206, 238, 270, 302, 334, 366, 398, 430, 462, 494, 526, 558, 590, 622, 654, 686, 718, 750, 782, 814. See PARAGRAPH INDEX
— Yorkshire, Notes from. See *Lancashire and South Yorkshire*
Southampton Harbour Board, 150th Anniversary of, 500
Southwell, Sir R., on Relaxation Methods: A Retrospect, 691
Space Heating, Problems of, 61
Spanish "Pegaso" Motor Car, 566*
Spanner, Box, Manufacture of, 195*
Spanner, E. F., the Late, 212. See LETTER, 338
Spar, Box, for Aircraft (Short Brothers & Hariand, Ltd.), 404*
Specialities, Incorporated, Airstream Direction Detector, 480*
Specifications, Standard. See *Standards; Standardisation*
Spectrographic Analysis of Low-Alloy Steels, 798
Speed Changing Gears. See *Gears; Gearing; Marine Propulsion*
—Control Switch (Smith's Industrial Instruments, Ltd.), 325*
— Reduction Gears. See *Gears; Gearing; Marine Propulsion*
— Trials. See *Trials*
Spencer, K. A., on Cathodic Protection and Engineering Design, 650
Spillway, Blithfield Reservoir, 598*
Spirit, Motor. See *Motor Fuels*.
Sporn, P., on Atomic Power and Electricity Supply in Ohio, 818
Spraying Equipment, Agricultural (E. Allman & Co., Ltd.), 85*, 86*
Spring-Making Machine (Tempered Spring Co., Ltd.), 59*
Spurrier Lecture on Road Transport and Commercial-Motor Manufacturers, by H. Spurrier, 821
St. Albans, Prae Wood, Wind-Power Equipment Exhibition at, 33*
St. Clement's Bridges, Victoria Docks, Aberdeen, 481*
St. Venant Theory for Torsion of Twisted Prisms, 769*
Stabilisers of S.S. "Andes," 491
Stabilising Machine, Automatic, for Fluorescent-Tube Manufacture, 389*
Stability of Aircraft. See *Aeronautics*
Stacker and Loader, Dual-Purpose (Steel Fabricators (Cardiff), Ltd.), 812*
Stacking and Unloading Machine (Crone & Taylor, Ltd.), 288*
Stafford and Preston Works of English Electric Co., Ltd., 19
Staging Units of Standard Aluminium-Alloy Parts (Aero Controls, Ltd.), 448*
Stalk and Weed Shredder (Steel Fabricators (Cardiff), Ltd.), 811*
Stanchions. See *Columns*

Standard Development Co., Ltd., Yeast Factory at Dovercourt, 76*
— "Eight" Motor Car, 534*
— System, British, of Limits and Fits, 817
Standard Telecommunications Laboratories, Ltd., Portable Aluminium-Alloy Mast, 127*
Standard Yeast Co., Ltd., Equipment at Dovercourt Factory, 76*
Standardisation on British Railways, 20. See LETTER, 84
— in Motor-Car Manufacture, 529
Standards, Cable, Commonwealth Conference on, 190
— Institution, British, Methods of Tests for Stabilised Soils, 60; Standardisation of Indian Locomotives in 1903, 801*; Memorandum on Value of Properties of High-Conductivity Copper, 111
— — British, Specifications, Steel and Aluminium Alloy Nuts and Bolts for Aircraft, 15; Wood Poles for Overhead Lines, 79; Milling Cutters, 79; Absolute Viscosity of Water, 79; Accuracy of Chucks for Lathes and Drilling Machines, 111; Classification of Diamond Powder, 143; Swaged Cable-End Assemblies for Steel Wire Rope for Aircraft, 143; Double-Coil Spring Washers for Aircraft, 143; Cartridge Fuse-Links for Use in Plugs, 207; Dimensions of Diamond Truing Tools, 254; Oil Suction and Discharge Hose, 288; Measuring and Control Instruments and Panels for Industrial Processes, 288; Dimensions of Collapsible Tubes, 288; Electric Cables and Flexible Cords, 320; Cotter Slots and Quick-Release Tapers, 320; Acceptance Tests for Turbo-Type Compressors and Exhausters, 367; Electricity Meters, 367; Accuracy of Circular Gear-Shaving Cutters, 367; Steel Butt-Welded Pipe Fittings, 512; Unified Machine Screws and Machine Screw Nuts, 512; Copper Tubes, 606; Copper Plate, 606; Methods of Protection Against Corrosion for Light-Gauge Steel Used in Buildings, 606; Dimensions of X-Ray Films for Crystallography, 606; Black Bolts, Screws and Nuts, 606; Analysis of Copper in Aluminium and Aluminium Alloys, 767; Cast-Iron Flanged Pipes and Flanged Fittings, 767; Aluminium-Bronze Rods and Forgings, 768; Symbols on Flow Diagrams of Chemical and Petroleum Plant, 798; Methods of Testing Raw Rubber and Unvulcanised Compounded Rubber, 798; Protective Transformers, 798; Winchester Bottles, 798; Spectrographic Analysis of Low-Alloy Steels, 798; Electroplated Coatings of Nickel and Chromium, 829; Nickel Anodes and Nickel Salts for Electroplating, 829; Preferred Numbers, 829; Paraffin Appliances, 829; Tubular Heat Exchangers, 829
Stanhay (Ashford), Ltd., Seed-Spacing Drill, 105*
Star, Radio Waves from, 316
Starke, B., & Co., Ltd., Kuhlmann Perspective Draughting Machine, 202*
Starters, Motor. See *Motors, Electric*
— for Oil Engine (C.A.V., Ltd.), 325*, 791*
State Railways. See *Railways*
Stations, Power. See *Power Stations*
— Railway, Inspection Ladder for Roofs, (Merryweather & Sons, Ltd.), 118*
Statistics, Trade. See *Trade*
Statutory Duty of Employers, 179
"Stavolt" Armature for Alternating-Current Electric Generator, 259*
Staythorpe Substation, 275-kV Transmission System, 122*
Steam Boats. See *Steamers*
— Boilers. See *Boilers*
— Cycles for British Power Stations, 827
— Engines. See *Engines*
— Locomotive in America (Review), 273
— Pipes, High Temperature, Calculation of Thickness of, 549. See LETTER, 723
— Plant, Back-Pressure, and Fuel Economy, Government Survey, 28
— Roller. See *Road Roller*
— Turbines. See *Turbines*
Steamer "Andes," Stabilisers of, 491
— "Capable," H.M. Tug, Variable-Pitch Propeller of, 582
— Under Construction, Lloyd's Statistics, 137, 562
— Electric Propulsion. See *Marine Propulsion*
— Geared Turbines for. See *Marine Propulsion*
— "Helix," Turbo-Electric Machinery of, 619*
— Launching of. See *Launching*
— "Ocean Vulcan," Sea Trials of, Report (Review), 165
— "Orsova," "Weldex" Bled-Steam Air Preheater for, 417*
— Propulsion of. See *Marine Propulsion; Engines; Turbines; Propellers*
— Salvage of. See *Salvage*
— "Vigilant" for Harbour Work, 153*
— See also *Engines; Marine Propulsion; Shipbuilding; Shipping; Ships; Turbines; Warships;* PARAGRAPH INDEX
Steamships. See *Ships; Steamers; Warships*
Steel, Alloy, Production in Sheffield, 90
— Brittle Fracture of, Glasgow Conference on, 70, 187, 220. See 639
— Castings, "Centrispun" (Firth-Vickers Stainless Steels, Ltd.), 91*
— — Research Association, British, Liquid-Metal Sampling Apparatus, 735*
— Consumption in Various Countries, 383
— Corrosion. See *Corrosion*
— Creep-Resisting, Design of, 455, 505*, 537*
Steel Fabricators (Cardiff), Ltd., Stalk and Weed Shredder, 811*; Dual-Purpose Loader and Stacker, 812*
— Fatigue of. See *Fatigue* under *Tests (Materials)*
Steel Founders' Association, British, Annual Dinner, 755
— Foundry. See *Foundry*
— Furnaces See *Furnaces*
— Heat Treatment of. See *Heat Treatment* under *Metallurgy*
— for High-Temperature Steam Pipes, 549. See LETTER, 723
— Light-Gauge, in Buildings, Protection Against Corrosion, Specification, 606
— Low-Alloy, Spectrographic Analysis of, Specification, 798
— Magnetic, Application of Calorimetry to, 517, 765
— Manufacture. See *Metallurgy*
— Microstructure of. See *Microphotographs*
— Plate, Mild, Brittle Fracture of, 70, 187, 220, 639
— Physical Properties as Function of Tempering Temperature, 84
— Rails. See *Rails*
— Rolling Mills. See *Rolling Mills*
— Ropes. See *Wire Ropes*
— Sheets, Printed, Drying Oven for (Stordy Engineering, Ltd.), 779*
— Statistics for Europe, Quarterly Bulletin of, 510
— Stress Distribution in. See *Stress; Tests (Materials)*
— Strip, Planetary Rolling Mills for (Ductile Steels, Ltd.), 545*
— — Stainless, Production at Shepcote Lane Works, Sheffield, 332*, 362*. See LETTER 436*
— Tests of. See *Tests (Materials)*
— Works. See *Works*
Steelmaking Related to Blast-Furnace Practice, 701
Steels Engineering Products, Ltd., Lorry-Mounted Tower Crane, 813*
Steering Unit, Mechanical Power, Studebaker Motor Car, 587*
Stewarts and Lloyds, Ltd., Jubilee of, 312
Stockdale Engineering Co., Ltd., Rotary Vacuum Filter with String Discharge, 260*
Stockholm, Sickla Works of Atlas Diesel Co., 641*
Stockpiling and Loading Equipment, Birkenhead Gasworks, 822*
Stockwell Garage, London Transport Executive, 703*
Stoke Newington Pumping Station, Dismantling of Beam Engines at, 501*
Stoker, Chain-Grate, for Shell Boiler, Influence of Coal Properties on Combustion, 61
— Mechanical, with Combined Bunker and Hopper Feeds (Hope's Heating & Engineering, Ltd.), 729*
— — Hodgkinson, for Boilers at Aero-Engine Factory, East Kilbride, 717*
Stone-Crushing Plant, Experimental, at Underwood Quarry, 281*
Storage and Distribution Depot, Petroleum, Pickering, 250*
— Shed of Timber Construction, Victoria Docks, Hull, 796*
Stordy Engineering, Ltd., Gas-Fired Drying Oven for Steel Sheets, 779*
Store, Shed, for Grain Silo at Dublin, 577*
Storey, T. (Engineers), Ltd., Bailey Bridge Units, 601*
Strain-Ageing in 6-per cent. Tin Phosphor-Bronze, 438
— Gauge. See *Gauge*
— See also *Stress*
Stratification, Thermal, and "Overturn" in Lakes and Reservoirs, 821
Stream-Line Filters, Ltd., Filtering Unit for Transformer Oil, 395*
Street Lighting Practice, 370
— Railway. See *Tramways*
— See also *Roads*
Strength of Materials. See *Stress* and *Tests (Materials)*
Stress, Alternating and Combined. See *Tests (Materials)*
— Analysis of Structures with Electronic Digital Computer, 230*, 277*
— Bending, in Simply-Supported Rectangular Plates, 308*, 358*
— in Concrete Slab with Reinforced Circular Hole, 808*
— in Curved Beam, Determination of, 103*
— Diffusion in Bridge-Deck Systems, 645*
— in High-Temperature Steam Pipes, 549. See LETTER, 723
— Limiting, in Prestressed-Concrete Structures, 490
— Optical Determination of. See *Photo-Elastic*
— Repetitions. See *Fatigue* under *Tests (Materials)*
— Strain Curves of Aluminium Alloys, 438
— in Twisted Elastic Prisms, 769*
— in Welded Mild-Steel Plates, 639
Stretcher-Strain Markings in Aluminium Alloys, 438
Strikes. See *Labour; Labour Notes;* PARAGRAPH INDEX
Strip-Feeding Machines (Rockwell Machine Tool Co., Ltd.), 279*
— Steel, Planetary Rolling Mill for (Ductile Steels, Ltd.), 545*
— — Stainless, Production at Shepcote Lane Works, Sheffield, 332*, 362*. See also LETTER, 436*
— Thickness Measurement by Radioactive Materials, 157
Stroboscopic Apparatus for Investigating Pressure Rise in Spark-Ignition Engines, 135*
Structural Design of Aeroplanes. See *Aeroplane* under *Aeronautics*
— Engineers, Institution of, Presidential Address by Lieut.-Col. R. F. Galbraith on Developments in Structural Engineering, 501
— Material, Aluminium as, 179
Structures, Buried or Submerged, Cathodic Protection of, 287. See *Erratum*, 299
— Concrete, Use of Electrical Strain Gauges on, 487
Structures, Framed, Analysis by Electronic Digital Computer, 230*, 277*
— Long-Term Tests on, Vibrating-Wire Strain Gauge for, 153*
— Prestressed-Concrete, Behaviour of, 551
— — Concrete. See also *Concrete, Prestressed*
— Reinforced-Concrete. See *Concrete, Reinforced*
— Ships', Testing Frame for, 115*
— Tubular Steel, for Factory Buildings, 617*
— Welded, Conference on, Programme, 318
Struts. See *Columns*
Stuart Lecture on Engine Research on Fuels and Lubricants, 37*
Studebaker Motor Car, 587*
Submarine Telegraphs. See *Telegraphs*
— Telephone. See *Telephone*
Substation, Ala Hydro-Electric Plant, 269*
— Green Ayre, for Lancaster-Morecambe-Heysham Line, 460*
— London Transport Executive, at Surrey Docks, 437*
— Sefton, New South Wales, Electronic Arc Suppression in Traction Rectifiers, 773
Sugar Centrifugal, Electrically-Driven (T. Broadbent & Sons, Ltd.), 293*
Sully, Dr. A. H., on Properties of Chromium and Its Alloys, 541
Sulphide Films on Copper, Growth of, 470
Sulphonating Pot, Electric Heater for (Isopad, Ltd.), 294*
Sulphur Dioxide and Atmospheric Pollution, 747
— Removal from Flue Gases, 145
Sulzer, Dr. R., the Late, 21*
Sun. See *Solar*
Sunshine Creek, Wyoming, Sediment Problems in, 3*
"Super Sprite" Rocket Motor, 287, 406*
Superheater, Locomotive. See *Locomotive*
Supervising Electrical Engineers, Association of, Electricity Supply: First Five Years of Nationalisation, by V. Clements, 663
Supply, Ministry of, "Appointed Day" for Iron and Steel Act, 1953, 50; Report on Future of Woolwich Arsenal, 147; Statement on Guided Rockets, 274; Automatic Radar Meteorological Station, 290*; Work of Ultra Short Wave Panel, 316; Exhibits at Aircraft Display at Farnborough, 406; Telemetry for Guided Weapons, 518*; Tank Factory, Leyland, Lancashire, 630*; Aero-Engine Factory, East Kilbride, 717*
Surface Dressings for Protecting Soil Formations, 793*
— Grinding Machine. See *Grinding* under *Machine Tools*
— Metallic, Properties of (Review), 516
Surge Tank, Conduit Furnished with, Calculation of Oscillations in (Review), 517
Surrey Docks Substation, London Transport Executive, 437*
Surveyors, Astronomy for, Elements of (Review), 387
Suspension Systems, Motor-Car, Developments in, 587*
Sutherland, Dr. W. D., on Combined Magnetisation of Magnetic Materials, 697*, 731. See 517
Swaging Machine. See *Machine Tools*
Swain, A. J., on Stretcher-Strain Markings in Aluminium-Magnesium Alloys, 439
Swain, F. E., on Control Valves for High Air-Mass Flows, 705*
Swan, Hunter, & Wigham Richardson, Ltd., Oil Tanker "Helix," 619*
Sweden, Atlas Diesel Co., Mining Machinery of, 641*
Swedish Pneumatic Tools and Machines, 499
Swift, F. the Late, 590
Swiss Federal Railways, Riding Control for Bogie of 6,000-h.p. Electric Locomotive, 285*
Swiss Locomotive and Machine Works, Riding Control for Locomotive Bogie, 285*
— See also *Switzerland*
Switches, Motor Starting. See *Motors, Electric*
Switchgear, 45-MVA 660-Volt Air-Break (British Thomson-Houston Co., Ltd.), 259*
— Circuit-Breaker, 750-MVA 33-kV (A. Reyrolle & Co., Ltd.), 264*
— — Breaker, Researches on, 644 (Review)
— Direct-Current, for Unified Boiler Control System, 676*
— Factory, Loughborough, Brush Electrical Engineering Co., Ltd., 569*
— Fuse Switch, 11-kV Outdoor, for Ring Mains (Ferguson, Pailin, Ltd.), 96*
— Fused, for Oilfield Work (Electro Mechanical Manufacturing Co., Ltd.), 291*
— High-Voltage, Insulation of, 767
— for Julia Hydro-Electric Station, 131*
— Portuguese Hydro-Electric Scheme, 662*
— Singapore Power Station (A. Reyrolle & Co., Ltd.), 284
— at Surrey Docks Substation, 437*
— for 275-kV Transmission System, 122*
— for Uskmouth Power Station, 552*
Switching of Telephone Calls, Electronics of, 389, 413*, 445*
Switzerland, Baden, Research Laboratory of Brown Boveri & Co., Ltd., 609*
— Zürich Electricity-Supply Schemes, 129*
— See also *Swiss*
Sykes, Dr. C., on Metallurgical Industries of Sheffield, 89*
Syringe, Hypodermic, Manufacture of Tubes for, 225*

T.

TABLE BAY Harbour, Model of, Measurement of Wave Heights in, 245*, 267*
— for Rocket and Comet Orbits (Review), 613
— Tilting, for Radiography (Watson & Sons (Electro-Medical), Ltd.), 224*
Tangential Water Wheels. See *Pelton Wheels*
Tank-Cleaning Plant for Oil Tankers at Cardiff, 149*
— Experimental, D. W. Taylor, Work of, 584
— — Wageningen, Researches at, 403, 425
— Factory, Leyland, Lancashire, 630*
— Locomotives. See *Locomotives*
— Ships, Motor. See *Oil Tankers*
— Steamers. See *Oil Tankers*
— Storage, at Dovercourt Yeast Factory, 76*
— — and Pipelines, Cathodic Protection of, Russian Book on (Review), 659
Tangyes, Ltd., 2½-b.h.p. Single-Cylinder Gas Engine, 215*
Tap, Expanding for special work (S. Osborn & Co., Ltd.), 57*
Tapers, Quick-Release, and Cotter Slots, Specification, 320
Tar and Bitumen Emulsion as Surface Dressings for Soil Roads, 793*
Target, Towed, High-Speed (Air Service Training Ltd.), 405*
Taskers of Andover (1932), Ltd., Electrically-Driven Pig-Food Mincing Machine, 45*; Tractor-Mounted Carrier Box, 45*
Tasmania Hydro-Electric Commission, 275-kW Hot-Galvanising Bath, 638*
Taylor, Dr. A., on Structure of Nickel-Rich Alloys, 541
Taylor, F. G., on Experimental Stone-Crushing Plant, 281*
Taylor, Dr. F. M. H., on Conservation of Fuel and Power Resources, 735
Taylor, J., on Gusts and Their Measurement, 765
Taylor, J. P., Storage Shed of Timber Construction, 796*
Taylor's Shaft, East Pool Mine, Redruth, Cornish Engine at, 342*
Taylor, Taylor & Hobson, Ltd., Microscope for Edges of Turbine Blades, 192*
Taylor Woodrow Construction, Ltd., Development of London Airport, 397*; Kirkby Factory for Tubewrights, Ltd., 617*
Tawse, W., Ltd., Foundations for St. Clement's Bridge, Aberdeen, 483*
Taxation and Motor-Car Industry, 529
Teaching. See *Education*
Technical College and Education. See *Education*
— Information and Documents Unit, Information on Conservation of Raw Materials in Europe, 20
— Societies. See *Institutions* and PARAGRAPH INDEX
Technological Education, Conference on, 723
Technologists and Scientists, Industrial, Advanced Short Courses for, 307
Teddington Industrial Equipment, Ltd., Protection Units for Oil Engine, 393*
Teed, P. L., on Titanium: A Metal of Engineering Importance, 603*, 635. See 455. See LETTERS, 756, 787
Telecommunications, Commonwealth, Growth in Traffic, 602
Telegraphy, Commonwealth, Growth in Traffic, 602
— Independent Side-Bend Communications Receiver for (Mullard, Ltd.), 184
— Wireless. See *Radar; Radio; Television*
— See also *Electricity* in PARAGRAPH INDEX
Telemetry for Guided Weapons, 518*
Telephone Calls, Electronics in Switching of, 389, 413*, 445*
— Cable, Submarine, Great Britain to America, 755
Telephony, Commonwealth, Growth in Traffic, 602
— Independent Side-Band Communications Receiver for (Mullard, Ltd.), 184
— Wireless. See *Radar; Radio; Television*
— See also *Electricity* in PARAGRAPH INDEX
Telescope, Radio, Manchester and Cambridge, 317
— at Royal Greenwich Observatory, Herstmonceux, 125, 211
Television Advisory Committee, First Report, 81
— Broadcasting, Application of Colour to, 389, 441*
— Camera, Underwater, Marconi-Siebe Gorman, Tank Test of (Siebe, Gorman & Co., Ltd.), 358*
— Developments by British Broadcasting Corporation, 24
— Policy, Government Memorandum on, 659
— 2nd Radio Exhibition, National, 338
— and Sound Broadcasts of Coronation Ceremonies, Technical Arrangements and Operations, 775
— Water-Level Receiver (Bailey Meters & Controls, Ltd.), 393*
— Work of British Broadcasting Corporation, 543, 573
Temperature Control of Molten Glass Feeder, 51
— — Unit (P.A.M., Ltd.), 171*
Tempered Spring Co., Ltd., Spring-Making Machine, 59*
Tempering. See *Heat Treatment* under *Metallurgy*
Tensile Tests. See *Tests (Materials)*
Ternary Alloys. See *Alloys* under *Metallurgy*
Terracer, Disc, Tractor-Mounted (H. Ferguson, Ltd.), 23*
Tests, Aeronautical See *Aeronautics*
— Bed at Aero-Engine Factory, East Kilbride, 717*
— — Flying, "Olympus-Canberra" and also "Canberra," 406
— of Celluloid Model Structures by Isodynamometer, 517, 665*
— Corrosion. See *Corrosion*
— of Grillages, 804*
— High-Voltage Cable, Mobile Van for (Crompton Parkinson, Ltd.), 62*
— House for Oil-Burning Equipment, White's Marine Engineering Co., Ltd., 119*
— of Launching Greases, 468
— Long-Term, of Structures, Vibrating-Wire Strain Gauge for, 153*
— Magnetic. See *Magnetic*

Tests (Materials):
Bending Tests of Simply-Supported Rectangular Plates, 308*, 358*
Compression-Creep Tests at High Temperatures, Equipment for, 28*
Creep Tests of Steel and Alloys for High-Temperatures, 455, 505*, 537*
— Testing Machines, 506*
Fatigue-Testing Machine, Push-Pull (W. & T. Avery, Ltd.), 322*
Hardness Tests, Vickers, Ball, Cone and Scratch, Conference, Sheffield, Programme, 314
Impact Tests of High-Purity Iron Alloys, 773
— — Izod, Significance in Gear Design and Performance, 166*
— — Slow-Bend for Investigating Brittle Fracture, 772
— — of Steel Plates, 70, 187, 220, 639
Magnetic Tests. See *Magnetic*
Notched-Bar Impact Tests. See *Impact Tests* (above)
Shearing Tests of Aluminium Rivets, 514*
Stress Determination, Optical. See *Photo-Elastic*
— in Materials and Structures. See *Stress*
Tensile and Impact Tests for Ship Plates, 639
— Tests of Aluminium Rivets, 514*
— — of High-Purity Iron Alloys, 773
— — of Titanium and Its Alloys, 603*
Testing of Copper-Base Alloy Castings, 223
— Machine, Compression-Creep, for High Temperatures, 28*
— — Compression and Transverse, for Concrete (Denison & Son, Ltd.), 294*
— — Creep, 506*
— — Fatigue, Push-Pull (W. & T. Avery, Ltd.), 322*
— — for Wire-Rope Grips, 734*
Tests, 3,500-h.p. Pametrada Marine Gas Turbine, 493*
— Rig for Electric Actuators (Tiltman Langley Laboratories, Ltd.), 797*
— 100-b.h.p. Six-Cylinder Oil Engine (Fodens, Ltd.), 290
— for Stabilised Soils, Standard Methods of, 60
— of Steam and Diesel-Electric Locomotives, British Railways, 305
— Track, High-Speed, for Motor Vehicles, at Lindley, 747
— of Two-Stroke Oil Engine for Automobiles, 385*, 419*. See *Erratum*, 519
Tester, Insulation, "Megger," 290
Testing of Copper-Base Alloy Castings, 223
— Dynamic, of Wire Ropes and Fasteners (E. H. Bentall & Co., Ltd.), 734*
— of Electricity Meters, 786
— Frame for Ships' Structures, 115*
— Laboratory, Leatherhead, for Domestic Electrical Appliances, 489*
— — See also *National Physical* and *Laboratory*
— Lubricant (Review), 165
— Machine, Compression-Creep, for High Temperatures, 28*
— — Compression and Transverse, for Concrete (Denison & Son, Ltd.), 294*
— — Creep, 506*
— — Fatigue, Push-Pull (W. & T. Avery, Ltd.), 322*
— — See also *Tests* (*Materials*)
— Raw Rubber and Unvulcanised Compounded Rubber, Methods of, Specification, 798
— See also *Tests* (*Materials*) ; *Trials*
Text-Books. See LITERATURE INDEX
Textile Industry, Use of Radioactive Materials in, 157
Thames, River, Dartford-Purfleet Tunnel under, 361
— — London, Scheme for Development of South Bank, 532
Thermal Efficiency of British Power Stations, 466, 827
— —Compound Beam Pumping Engines, 501
— — 3,500-h.p. Pametrada Marine Gas Turbine, 493*
— Treatment, Metals. See *Heat Treatment* under *Metallurgy*
Thermodynamics (Review), 195
— Applied to Heat Engines (Review), 771
— Enthalpy-Entropy Diagrams, for Gas Turbines (Review), 484
Thomas, B., the Late, 11
Thomas, E. L., on Analogue Computor, 477*
Thomas, R., & Baldwins, Ltd., versus Cummings, Legal Decision in, 99. See LETTER, 179
Thompson, J. (Sheffield), Ltd., Standard Engineers' Tools, 57*
Thompson, J. (Wilson Boilers), Ltd., Boiler for Aero-Engine Factory, E. Kilbride, 717*
Thompson, R. W. S., on Stratification and "Overturn" in Lakes and Reservoirs, 821
Thompson, W., the Late, 276
Thornycroft, J. I., & Co., Ltd., S.S. "Vigilant," 158* ; 30-h.p. Marine Diesel Engine, 261* ; 52-kW Diesel-Driven Generator, 261* ; Motor Launch for Ceylon Navy, 301* ; Triple-Screw Motor Launch, 680*
Threads, Screw. See *Screw*
Thring, Prof. M. W., on Flame Length in Open-Hearth Furnaces, 725. See 744
Tie, Angle, Behaviour of, Report on Investigations on, 286
Tiltman Langley Laboratories, Ltd., Safety Device for Torque Overload, 682* ; Test Rig for Electric Actuators, 797*
Timber Construction, Storage Shed of, Victoria Docks, Hull, 796*
— Development Association, Exhibits at Building Exhibition, 727
— Flooring for Aluminium-Alloy Bascule Bridge, Aberdeen (Acme Flooring & Paving (1904), Ltd.), 481*
— Investigations by Forest Products Research Board, 337
— Research in Australia, 679
Time-Delay Relay Switch, Pneumatic (Electro Methods, Ltd.), 218*
— and Motion Studies, Use and Techniques of, 390
— Service Observations at Royal Observatories, 126, 211
Tin Box Making Machinery (F. J. Edwards, Ltd.), 460*
— Plate Sheets, Printed, Drying Oven for (Storby Engineering, Ltd.), 779*
— Research Institute, Annual Report, 83
Tingle, F. L., the Late, 270
Tinzen Hydro-Electric Station, Zürich, 134*
Tipler, H. R., on Properties of High-Purity Iron Alloys, 773
Tipper, Dr. C. F., on Effect of Dimensions on Notch Bend Testing, 71 ; on Fracture of Alpha Iron, 772
Titanium Production Plant of Imperial Chemical Industries, Ltd., 211
— — and Properties of, 402, 427, 438
— Properties and Application of, 455, 603*, 635. See LETTERS, 756, 787
Tobias, Dr. S. A., on Vibrations of Machine-Tool Structures, 707*
Todd, Dr. F. H., on Hydromechanics Research Programme by Bureau of Ships, U.S. Navy, 584
Tolerances in Machine Work. See *Gauges*
Tool Engineers, American Society of, Survey of Obsolete Production Equipment, 627
— — Standard (J. Thompson (Sheffield), Ltd.), 57*
— Holder. See *Machine Tools*
— Machine. See *Machine Tools*
— Pneumatic. See *Machine Tools*
Toothed Gear. See *Gear ; Gearing ; Marine Propulsion*
Torque Overload, Safety Device for, 682*
Tower Clock, Electronic Chiming Installation for (Gent & Co., Ltd.), 664
— Crane, Lorry-Mounted (Steels Engineering Products, Ltd.), 813*
— Lattice Steel, for 275-kV Transmission System, 122*
— Tubular, for 275-kV Transmission Line, 678*. See LETTER, 787
Towler Brothers (Patents), Ltd., Hydraulic Pumps for Testing Frame for Ships' Structures, 115
Town Gas. See *Gas*
— Smokeless Zones in, 83, 498
Track, Test, High-Speed, for Motor Vehicles, 747
Traction, Electric. See *Railways ; Tramways*
Tractor, Agricultural, 31·3-b.h.p. Diesel-Engined (D. Brown Tractors, Ltd.), 790*
— — Light, 12-h.p. Diesel-Engined (H. L. Arnes & Co. (Engineering), Ltd.), 813*
— — Model M4 "Universal" (Nuffield Organisation), 22*
— — Power Arm for (F. W. McConnel, Ltd.), 105*
— Cantilever Traction Attachment for (Saloplan Engineers, Ltd.), 745*
— Crawler, with Angle Dozer for Coal Compacting (Mackay Industrial Equipment, Ltd.), 727*
— — Diesel-Driven (International Harvester Co. of Great Britain, Ltd.), 106*
— Half-Track Conversion Set for (J. C. Bamford, Ltd.), 812*
— Horticultural, 14-h.p. Multi-Purpose (Barford (Agricultural), Ltd.), 45*
— Industrial, 42-b.h.p. Diesel-Engined (Lansing Bagnall, Ltd.), 160*
— Mounted Carrier Box (Taskers of Andover (1952), Ltd.), 45*
— — Disc Terracer (H. Ferguson, Ltd.), 23*
— — Rear Transport Platform (Scottish Mechanical Light Industries, Ltd.), 45*
— to-Roller Conversion Chassis (E. V. Twose, Ltd.), 105*
Trade Disputes. See *Labour* and *Trade Societies* in PARAGRAPH INDEX
— Exhibition. See *Exhibition*
— Export, Electrical Equipment, 594
— — Engineering, 243
— — Letter by Board of Trade, 787
— — to United States and Canada, 819
— Publications, 31, 64, 96, 128, 159, 175, 213, 286, 320, 384, 416, 480, 525, 576, 608, 640, 704, 768, 797, 831. See PARAGRAPH INDEX
— Unions. See *Labour* and *Trade Societies* in PARAGRAPH INDEX
Trafford Power Station, Unified Boiler Control at, 676*
Trailer, General-Purpose (Maxim Engineering, Ltd.), 813*
— 7-ton Short-Haul (Low Loading Trailer Co., Ltd.), 812*
Train Control, Automatic, Report on, 49, 53. See LETTER, 147
— See also *Railway*
Training. See *Education*
Tramway Cars, Single-Deck High-Speed, Leeds Corporation, 124*, 254*. See *Erratum*, 199
— See also PARAGRAPH INDEX
Transformer, Arc-Welding (Murex, Ltd.), 356*
— Auto, 120-MVA 275/132-kV, Model of (C. A. Parsons & Co., Ltd.), 263*
— 750-kVA, Core and Windings of (C. A. Parsons & Co., Ltd.), 264*
— High-Voltage, Insulation for, 767
— for Julia Hydro-Electric Station, 131*
— Magnetisation of Cores of, Investigations on, 697*, 731
— Manufacture by Foster Transformers, Ltd., 471*
— 120-MVA 132/275-kV Model of (Metropolitan-Vickers Electrical Co., Ltd.), 262*
— Portuguese Hydro-Electric Scheme, 661*
— Protective, Specification, 798
— Singapore Power Station, 284
— at Surrey Docks Substation, 437*
— Transient Voltages, Model for Determining, 118
— for 275-kV Transmission System (British Thomson-Houston Co., Ltd.), 122*
— Uskmouth Power Station, 554*
Transmission, Electric, Ship Propulsion. See *Marine Propulsion*
— Gear. See *Gear ; Gearing ; Marine Propulsion*
— and Gearboxes, Motor Car, Developments in, 587*
— of Power. See *Marine Propulsion ; Power Transmission*
Transmitter, Rudder-Angle (Smith's Industrial Instruments, Ltd.), 325*
— Telemetry, for Guided Weapons, 518*
Transmitting and Receiving Equipment for Colour Television Broadcasting, 443*
"Transphere" Butterfly Valve (D. F. Wiseman & Sons, Ltd.), 705*
"Transponders," Balloons for, Automatic Radar Meteorological Station, 299*
Transport Act and Decentralisation of British Railways, 20. See LETTER, 84
— — 1953, Effect on British Railways, 434
— Air. See *Aeronautics*
— Box for Tractor (Whitlock Brothers, Ltd.), 790*
— and Civil Aviation, Ministry of, Car Ferry Terminal at Dover, 55* ; Statement on London Airport, 139 ; Development of London Airport, 397* ; British Transport Commission Annual Report, 561
— Ministry of, Proposed Amalgamation with Ministry of Civil Aviation, 19 ; Report on Harrow-Wealdstone Collision, 49, 53. See LETTER, 147 ; Statement on White-inch-Linthouse and Dartford-Purfleet Tunnels, 361 ; Statement on New Road Construction, 785 ; Experiments on Surface Dressings for Soil Road, 793
— Motor. See *Road ; Motor*
— Platform, Tractor-Mounted (Scottish Mechanical Light Industries, Ltd.), 45*
— Railway. See *Railway*
— Road. See *Road ; Motor*
Use of Fork-Lift Trucks and Pallets in, 522
Transporter, Bulk-Cement (London Aluminium Co., Ltd.), 109*
Travelling Cranes. See *Crane*
Tray, Distillation, for Fractionating Columns (W. J. Fraser & Co., Ltd.), 325*
Trench Digger, "Cheshire" Petrol-Driven (Salopian Engineers, Ltd.), 106*
Trevithick, R., Work on Steam Engine, 339 ; Preservation of Cottage of, 371
Trial Trips and Launches of Ships, 15, 47, 79, 111, 159, 187, 207, 248, 303, 335, 472, 540, 601, 670, 732, 790, 826
— See also *Tests*
"Trident" Experimental Supersonic Aircraft, 74*
Trief Process for Blast-Furnace Slag Cement, 557*. See *Erratum*, 640
Trier Brothers, Ltd., Single-Line Grease Lubricator, 296*
Trinity House, Navigation Light for "Ambrose" Lightship, 234*
Triode, Germanium, Point Contact (General Electric Co., Ltd.), 126*
Triple-Expansion Engines. See *Engines, Steam*
Troost, N., on Theory and Operation of Electrostatic Precipitation, 776
Truck, Battery-Operated, Oil or Petrol-Driven. See *Motor Truck ; Motor Vehicle*
— Railway. See *Wagons*
— See also *Bogie*
Trusts and Foundations (Review), 227
Tube, Collapsible, Dimensions of, Specification, 288
— Condenser, Non-Destructive Testing of, 623
— — Use of Titanium in, 455
— Copper, Specification, 606
— Expanders (S. Osborn & Co., Ltd.), 57*
— Fluorescent, Developments in (General Electric Co., Ltd.), 388*
— Gilled, for "Weldex" Bled-Steam Air Preheater (Wellington Tube Works, Ltd.), 417*
— Railways. See *Underground Railways ; London Transport Executive*
— Seamless, Manufacture and Manipulation by Accles & Pollock, Ltd., 161*, 193*, 225*
— Steel, for Factory Buildings (Tubewrights, Ltd.), 617*
— Wells. See *Wells*
— See also *Pipes*
Tubewrights, Ltd., Factory Buildings of Tubular Construction, 617* ; Tubular Transmission-Line Tower, 678*. See LETTER, 787
Tucker, Dr. A. J. P., on Growth of Sulphide Films on Copper, 470
Tufnol, Ltd., Oil-Pipe Coupling, 260*
Tungsten Lamps. See *Lamps* under *Electric*
— Wire, Coiled-Coil, for Cathodes, Production of, 389*
Tunnel, Concrete-Lined, for Machkund Hydro-Electric Scheme, 683
— Dartford-Purfleet, under River Thames, 361
— Discharge, Reinforced-Concrete, Blithfield Reservoir, 598*
— Feeder, for Julia Power Station, Zürich, 129*
— Whitelnch-Linthouse, under River Clyde, 361
Turbine, Gas, 750/1,000-kW (Ruston & Hornsby, Ltd.), 11
— — 13,000 and 27,000-kW Beznau Power Station, 612*
— — for British Power Stations, 827
— — Comparator for Root Serrations of Blades 158*
— — for Driving Air Compressor, Model of (Harland & Wolff, Ltd.), 394*
— — Enthalpy-Entropy Diagrams for (Review), 484
— — Fuel and Lubricant Research with, 37*
— — 5,400-b.h.p., for H.M.S. "Grey Goose" (Rolls-Royce Ltd.), 673*
— — 1,260-h.p. Industrial (Ruston & Hornsby, Ltd.), 358*
— — Liquid-Fuel Turbo-Starter for (Plessey Co., Ltd.), 733*
— — 3,500-h.p. Marine, 491*
— — Small, Industrial and Aeronautical Applications of, 668
Turbine, Gas, Use of Solid Fuel in, Experiments on, 146
— — "Turbomeca" (Blackburn & General Aircraft, Ltd.), 321
— — See also *Engines* under *Aeronautics*
— Hydraulic, Annular-Flow Guide Vanes for, 550*
— — 62,000-h.p., Castelo do Bode Power Station, 660*
— — 16,000-h.p. Francis, Albula Power Station, 129
— — 16,000-h.p. Francis, Julia Power Station, 130*
— — 24,260-kW Kaplan, Ala Power Station, 268*
— — 75-MW Pelton-Wheel, Santa Mussenza Power Station, 269*
— — 34,000-h.p., at Tinzen Power Station, 134*
— — 36,000-h.p., Vila Nova Power Station, 662*
— — See also *Power Plant ; Pelton Wheels*
— Impulse, Compressed-Air, Brown, Boveri & Co., Ltd., 610*
— Pumps. See *Pumps, Centrifugal*
— Steam, Blading for. See *Blading*
— — 60-MW, High-Pressure Shaft for (C. A. Parsons & Co., Ltd.) 264*
— — Marine, Geared. See *Marine Propulsion*
— — See also *Turbo-Generators*
— Steamers. See *Steamers ; Warships*
Turbo-Blower, 2,200-h.p., for Blast Furnace (General Electric Co., Ltd.), 761*
— Compressors, Acceptance Tests for, Specification, 367
— Electric System, Ship Propulsion. See *Marine Propulsion*
— Exhausters, Acceptance Tests for, Specification, 367
— Extractor, Exhaust, for Internal-Combustion Engines (Wade Engineering, Ltd.), 358*
"Turbomeca" Gas Turbine and Compressor, 321
Turbo-Generators, New, for British Power Stations, 827
— — 20-kW Parsons, 215*
— — 25-MW, Singapore Power Station, 283
— — 60-MW, Uskmouth Power Station, 554*
— Starter, Liquid-Fuel, for Gas Turbine (Plessey Co., Ltd.) 733*
Turin, International Mechanical Engineering Congress Programme, 63
Turner Manufacturing Co., Ltd., Two-Stroke Oil Engines for Motor Cars, 385*, 419* See *Erratum*, 519 ; Two-Stroke 12-h.p. Oil Engine for Motor Cars, 663*
Turning. See *Machine Tools*
— and Boring Mills. See *Machine Tools*
Twist, Axes of, in Elastic Prisms, 769*
Twisteel Reinforcement Co., Ltd., Sheffield Refuse-Disposal Plant, 633.
Twose, E. V., Ltd., Tractor-to-Roller Conversion Chassis, 105*
Tylecote, Dr. R. F., on Oxidation of Copper in Temperature Range 200 deg. to 800 deg. C., 470

U.

UDALLS, J. J., BUILDING CO., LTD., Jacking Unit for Prestressing Concrete, 606*
Ultrasonic Flaw Detector for Rails (Branson Instruments Inc.), 110*. See *Addendum*, 412
Underground Corrosion of Metals, Investigations on, 428, 434
— Railway, Glasgow, Proposed Extension to, 626
— — Improvements in Ventilation of, 712
— — See also *London Transport Executive*
Underwood Quarry, Somersetshire, Experimental Stone-Crushing Plant, 281*
Unions, Trade. See *Labour* and *Trade Societies* in PARAGRAPH INDEX
Unit Loads and Palletisation, Symposium on, 522
United Aircraft Corporation, Hamilton-Standard Aircraft-Cabin Refrigerating Unit, 255*
— — Corporation of United States, Aircraft Propeller-Blade Forging of Titanium Alloy, 373*
— Kingdom Atomic Energy Project, Future Organisation of, 657
— — Coal Production in, 691
— — United States and Germany, Engineering Exports Compared, 243
— Nations Economic Commission for Europe, Electric Development on Inter-National Rivers, 141 ; Report on European Water Power, 178
— States Air Force, Aircraft Propeller-Blade Forging of Titanium Alloy, 373*
— — Aircraft Carrier "Antietam" with Angled Flight Deck, 52*
— — Ammunition Industry, British Productivity Team's Report on, 17
— — Army Transportation Corps, 1,600-h.p. Variable-Gauge Diesel-Electric Locomotives, 233*
— — Atomic Power Stations in, 504
— — Atomic Power and Electricity Supply in Ohio, 818
— — Atomic Weapon Industry and Nuclear Power, 345*, 372
— — Brittle Fracture Investigations of Steel in, 70, 187, 220. See 639
— — Coast-Guard "Ambrose" Lightship, 234*
— — Colour Television Broadcasting in, 390, 441*
— — District Heating in, 473*, 507
— — Materials Handling Equipment and Methods in, Report, 369
— — Materials Policy Commission of, Report of, 381
— — Motor-Car Developments in, 589
— — Navy. See *United States* under *Warships*
— — Railways, Rail-End Technique in, 299

United States, Research Fellowships Tenable in, 403
— — Rocket Exploration of Upper Atmosphere, 360
— — Science in, Report on, 1951-52, 690
— — Scottish Council (Development and and Industry), Mission to, 819
— — Sediment Questions in Irrigation Problems in, 1*
— — Survey of Obsolete Production Equipment, 627
— — Teaching and Practice of Management in, 689. See *Addenda*, 813. See LETTER, 756
— — Training Graduate Engineers in, 401
— — United Kingdom and Germany, Engineering Exports Compared, 243
— — See also *America*
United Steel Companies, Ltd., 5-h.p. Electric Mine Drilling Machine, 58*
"Universal" M4 Model Agricultural Tractor, 22*
University, Durham, King's College, Newcastle-upon-Tyne, Appeal for, 306, 558
— Glasgow, Investigations of Combined Magnetisation of Magnetic Materials, 517, 697*, 731
— Grants Committee, Report on University Development, 1947-52, 306, 558
— Liverpool, Webb's Approximation of Sec θ, by Dr. T. A. S. Jackson, L. Rosenhead and T. Murphy, 298
— Manchester, Stress Analysis by Electronic Digital Computer, 230*, 277*; Electronic Computing Machine of, 343, 349
— Nottingham, Stuart Lecture on Engine Research in Fuels and Lubricants, by Dr. C. G. Williams, 37*; Machines for Measuring Load and Deformation of Rubber, 196*; Investigation on Bending of Simply-Supported Rectangular Plates, 308*, 358*
— Oxford, Conference on Young Worker: Education for Human Relations, 660
— See also *Education*
Unloading and Stacking Machine (Crone & Taylor, Ltd.), 288*
Uranium, Sources of, 381
— Supplies and Nuclear Power, 345, 372
Uskmouth Power Station, 552*
U.S. Tool Co., Strip-Feeding Machines, 279*

V.

VACUUM Filter, Rotary, with String Discharge (Stockdale Engineering Co., Ltd.), 260*
Vacuum Oil Co., Wandsworth Bulk Petrol Terminal, 308
"Valiant" Mark 2 Bomber Aircraft, 374*
Valve, Control, for High Air-Mass Flows (D. F. Wiseman & Sons, Ltd.), 705*
— — for Hydraulic Machinery, Investigations on, 209
— Diaphragm, Ebonite (Saunders Valve Co., Ltd.), 263*
— and Fittings, Design of (Review), 134
— Gear of Cornish Engines, 340*
— Guarding, for Sensitive Vacuum Gauge (Pametrada), 297*
— Hydraulic, Two-Way (G. Ellison, Ltd.), 328*
— and Valve Gear. See also *Engines*
van der Veen, Dr. J. H., on Notched Slow-Bend Test as Brittle-Fracture Test, 772
van Iterson, Dr. F., on Thickness of High-Temperature Steam Pipes, 723. See 549
Van Lammeren, Prof. W. P. A., on Ship-Model Research at Wageningen Tank, 403. See 425
Vanes, Guide, Annular-Flow, for Hydraulic Turbines, 550*
Variable-Speed Gear. See *Gear*
"Vautour" Twin-Jet Military Aircraft, 74*
Velocity Ratios of Epicyclic Gears, Calculation of, 198*
Venezuela, Cardon Refinery, Model of Pumping Plant at (Sigmund Pumps, Ltd.), 394*
— Triple-screw Motor Launch for, 680*
Ventilating and Heating Engineers, Institution of. See *Heating*
Ventilation of London Underground Railways, Improvements in, 712
— Pressure, for Oil Tanker "Helix," 621
— System of Research Building of C. A. Parsons & Co., Ltd., 714
Venturi Meter, Calculation of Compressible Flow Through, 147
— Tubes for Fluid-Flow Measurement, Problems of, 6*, 35*. See LETTER, 244*
Vermuyden and the Fens (Review), 706
Vessels, Pressure, Welds in, Ultrasonic Examination of, by W. J. Fraser & Co., Ltd., 211
Viaduct. See *Bridges*
Vial Capper and Spinner (Fords (Finsbury), Ltd.), 356*
Vibrating-Wire Strain Gauge, for Long-Term Tests on Structures, 153*
Vibrations of Machine-Tool Structures, Experiments on, 707*
— in Ships, and Machinery, Investigations on, 628
Vibratory Classifier for Materials (Holman Brothers, Ltd.), 189*
"Vibrex" Panel Fasteners, 827*
Vibro-Verken, A.B., Diesel-Engined Vibratory Soil Compactor, 60*
Vickers-Admiralty Gearing Research Association, Significance of Izod Test in Gear Design, 166*
Vickers-Armstrongs Ltd., "Valiant" Mark 2 Bomber Aircraft, 374*
"Victomatic" Milling Machine, 25*
"Victor" Bomber Aircraft, 374*
Victoria Dock, Aberdeen, Aluminium-Alloy Bascule Bridge, 481*
— — Hull, Storage Shed of Timber Construction, 796*
Victoria Machine Tool Co., Ltd., Heavy-Duty Milling Machine, 25*
— State Electricity Commission, 180-kW Hot-Galvanising Bath, 638*
"Vigilant" S.S., for Harbour Work, 158*
Vignoles, Lt.-Col. W. A., the Late, 563
Vila Nova Hydro-Electric Scheme, 660*
Villiers Engineering Co., Ltd., 11-h.p. Single-Cylinder Petrol Engine, 32*
Vincenti, A., on Unit Loads and Palletisation, 522
Viner, A., the Late, 814
Vinyl Resin Plant, Aycliffe, of Bakelite, Ltd., 715*
"Viper 3" Jet Aero Engine, 329*
Viscosity, Absolute, of Water, Specification, 79
Volkswagen Motor Car, 535*, 567*
Voucher, Ltd., Electrically-Driven Cold-Sawing Machine, 61
Vulcan Foundry, Ltd., 1,500-h.p. Diesel-Electric Locomotive, 172*
"Vultur" Naval Strike Fighter Aircraft, 74*

W.

WADDINGTON, R. B., the Late, 490
Wade Engineering, Ltd., Exhaust Turbo-Extractor, for Internal-Combustion Engines, 358*
Wadkin, Ltd., Double-Extended Tenoning Machine, 653*; 24-in. Panel Planing Machine, 653*
Wages. See *Labour;* PARAGRAPH INDEX
Wageningen Tank, Ship-Model Research at, 403, 425
Wagon Building Programme. British Railways, 51
— Experimental, of Aluminium Construction, British and Nyasaland Railways, 798
— Motor. See *Motor Vehicles; Tractors*
— Railway, Ships for Transport of, 522
Wales, South, Abernant Colliery Project, 243
— — Notes from. See *South-West*
Walker Brothers (Wigan), Ltd., 75-b.h.p. Diesel-Electric Mobile Crane, 395*
Walker, R. C., the Late, 381
Wall, Acoustic, at London Airport, 201*
Wall, T., & Sons, Ltd., Ice-Cream Manufacturing Plant of, 502*
Wallace, Sir W., on Survival at Sea, 458. See 465. See LETTER, 532
Walley, E. S., & Co., Ltd., Gang Mower and Loader, 106*
Walley, J. W., on Permanent-Magnet Crack Detector, 5*
Walters, R. T., Storage Shed of Timber Construction, 796*
Wandsworth Bulk Petrol Terminal, 308
Wansbrough, G., on Titanium, 756. See 453, 603,* 635. See LETTER, 787
War Office, Mechanical Handling Demonstration by, 499
Ward, J. O., on Design of Creep-Resisting Steels, 505*, 537*. See 455.
Warfare, Use of Aircraft in. See *Aeronautics*
— Naval. See *Warships*
Warning, Flood, System, for East Coast, 211

Warships:

Admiralty-Vickers Gearing Research Association, Significance of Izod Test in Gear Design, 166*
Aviation, Naval. See *Aeronautics*
French Destroyer "Maillé Brézé" Salvage Work on, 608
H.M. Aircraft-Direction Frigate "Salisbury," Launch, 13*
— Canadian Navy, Cathodic Protection of, 650
— Ceylon Navy, Motor Launch for, 301*
— Gunboat, "Grey Goose," 5,400-b.h.p. Gas Turbine, 673*
— Motor Boats for Royal Navy, 170
— Ships and Establishments, Cathodic Protection of, 650
— Steam, Tug "Capable," Variable-Pitch Propeller, 582*
Jane's Fighting Ships, 1953-54 (Review), 740
Naval Aeronautics. See *Aeronautics*
— Aircraft, Undercarriage for (British, Messier, Ltd.), 799*
— Construction Research Establishment Testing Frame for Ships' Structures 115*
Royal Canadian Navy, Cathodic Protection for, 650
— Ceylon Navy, Motor Launch for, 301*
— Navy, Motor Boats for, 170
United States Aircraft Carrier, "Antietam" with Angled Flight Deck, 52*
— — Navy, Hydromechanics Research by, 584
See also *Naval* in PARAGRAPH INDEX

Washers, Double-Coil Spring, For Aircraft, Specification, 143
Waste-Oil Firing Unit (Kamel Products, Ltd.), 640*
Water, Absolute Viscosity of, Specification, 79
— Cooling of Open-Hearth Furnaces, 772
— De-Aerated, Estimation of Dissolved Oxygen in, 103
— Department, Glasgow Corporation, Annual Report, 275. See 240
— Engineers, Institution of, Stratification and "Overturn" in Lakes and Reservoirs by R. W. S. Thompson, 821; Reduction with Age of Carrying Capacity of Pipelines, by P. Lamont, 821; Construction of Bore-Hole in Unconsolidated Formation, Using a Graded Filter, by R. J. Bell, 821
— Filters. See *Filters*
— Fog Equipment under London Transport Escalators, 822
— Friction. See *Hydrodynamics*
— Gas. See *Gas*
— Level Receiver, Television (Bailey Meters & Controls, Ltd.), 392*
— Power, European, Report on, 178
— — See also *Hydraulics; Pelton Wheel; Power Plant; Power, Water; Turbine, Hydraulic*
— Research Association, Inauguration of, 725
Water Supplies, Contamination by Radioactive Substances, 412
— — Glasgow Corporation, Extensions to, 240. See 275
— — and Proposed Grand Contour Canal, 741*
— — Statement on Nationalisation of, 371
— — See also *Irrigation; Wells*
— Tanks. See *Tanks*
— Treatment Plant, Buscot Waterworks (Pulsometer Engineering Co., Ltd.), 493
— Tube Boiler. See *Boiler*
— Turbines. See *Turbines, Hydraulic; Pelton Wheel; Power Plant*
— Unit, Automatic-Pressure (J. Beresford & Son, Ltd.), 653*
— Wheel. See *Pelton Wheel; Turbine, Hydraulic; Power Plant*
Waterbury Farrel Foundry & Machine Co., Sendzimir Rolling Mill at Shepcote Lane Works, Sheffield, 333*, 363*
Waterways. See *Rivers; Canals*
Waterworks, Buscot, Water-Treatment Plant, 493
— See also *Water Supply* and PARAGRAPH INDEX
Watsham's, Ltd., 275-kV Transmission System, 122*
Watson & Sons (Electro-Medical), Ltd., Tilting Table for Radiography, 224*
Watt Engines in Cornwall, 339
— Monument, Greenock, Appeal for, 660
Watts, P. J., the Late, 250
Wave Basins of Hydraulics Research Board, 18
— Heights in Table Bay Harbour, Model of, Measurement of, 245*, 267*
— Mechanics (Review), 228
— Sea, Calming, by Pneumatic Breakwater, 120, 138*. See LETTER, 212
Weapons, Guided, Telemetry for, 518*
Wear of Carbon Brushes at High Altitudes, Investigation on, 726
— in Internal-Combustion Engines, Research on, 41*
— Measuring Plant, Piston-Ring (Shell-Mex and B.P., Ltd.), 395*
Wear Shipbuilders' Association, Centenary of, 398
Weather. See *Meteorology*
Web Guider, Hydronic (Ferranti, Ltd.), 669*
Webb, Dr. C. R., on Effect of Gradient on Fuel consumption and Speed of Road Vehicle, 44
Webb's Approximation for Sec θ, 298
Weed and Stalk Shredder (Steel Fabricators (Cardiff), Ltd.), 811*
Weighing Machines for Grain Silo at Dublin (W. & T. Avery, Ltd.), 580*
Weller, A., on Cathodic Protection in Belgium, 650
Weir, G. & J., Ltd., Investigation on Dissolved-Oxygen in De-Aerated Water, 103; Model of Sextuple-Effect Evaporating Plant for Sea Water, 395*
— Rock Fill, on Colorado River, 4*
Welbourn, D. B., on Velocity Ratios of Epicyclic Gears, 198*
Welds in Pressure Vessels, Ultrasonic Examination of by W. J. Fraser & Co., Ltd., 211
Welded Ship Plates, Brittle Fracture in, 70, 187, 220
— Structures, Conference on, Programme, 318
Welder, Flash, Automatic (Asea Electric, Ltd.), 291*
— Spot, Portable (Ring Motors, Ltd.), 352*
"Weldex" Bled-Steam Air Preheater, 417*
Welding of Aluminium-Alloy Motor Yacht "Morag Mhor," 180*
— Arc Transformer Equipment (Murex, Ltd.), 356*
— Engineering and Marine Exhibition, Olympia, 11, 21, 237*, 257*, 289*. (See *Erratum*, 361)
— Equipment, 250-Ampere Inert-Arc (Metropolitan-Vickers Electrical Co., Ltd.), 261*
— Institute of, Annual Dinner, 594
— Machine, Arc, Diesel-Driven (British Twin Disc and Clarifiers, Ltd.), 324*
— — Continuous, Manual (Fusarc, Ltd.), 294*
— — Diesel-Driven, Single-Operator (Quasi-Arc Co., Ltd.), 324*
— — for Motor-Vehicle Wheel Rims (A.I. Electric Welding Machines, Ltd.), 257*
— — Spot, Portable (A.R.O. Machinery, Ltd.), 323*
— Plant at Shepcote Lane Works of Firth-Vickers Stainless Steels, Ltd., 332*, 362*
— Press, Automatic, for Wire Mesh (Asea Electric, Ltd.), 291*
— — Automatic, for Wire Mesh (Asea Electric Ltd.), 291*
— Research Association, British, Annual Report, 114
— — in British Merchant Shipbuilding, 639
— Set, Metal-Rectifier (Quasi-Arc Co., Ltd.), 324*
— Society, American, Annual Meeting, 586; Adams Lecture on Welding Research in British Merchant Shipbuilding, by R. B. Shepheard, 639. See 586
— Strip, Clamping Machine for (E. Bode & Son, Ltd.), 726*
— Transformer and Regulators, Multi-Operator (Rockweld, Ltd.), 262*
— Work, Positioning Appliance for (F. Bode & Son, Ltd.), 602*
Well, Borehole in Unconsolidated Formation, Use of Graded Filter, 821
Wellington Tube Works, Ltd., "Weldex" Bled-Steam Air Preheater, 417*
Wellman Smith Owen Engineering Corporation, Coiling and De-Scaling Plant at Shepcote Lane Works, Sheffield, 333*, 363*
Wellpoint with Improved Filter (G. Wimpey & Co., Ltd.), 182
Wells, Dr. A. A., on Influence of Welding on Notch-Brittle Fracture, 71
Wells, G. E., the Late, 28
Wells, W. A., on Birmingham Museum of Science and Industry, 276*. See 214*
Welsh Industries Fair, 412*
West's Gas Improvement Co., Ltd., Selective-Screen Conveyor, 828*
West Hartlepool Works of Siemens Brothers & Co., Ltd., 94
— of Scotland Iron and Steel Institute. See *Iron and Steel*
Westinghouse Brake & Signal Co., Ltd., Cathodic Protection of Buried or Submerged Structures, 287. See *Erratum*, 299
Westinghouse Electric & Manufacturing Co.' 2,958-h.p. Electric Locomotive for Netherlands Railways, 65*
Westminster Abbey Coronation Ceremonies, Sound and Television Broadcasts of, 775
— City Council, Pimlico District Heating Scheme, 422, 507*
Westwood, Lord, the Late, 447
Whale Catcher, "Setter IX" Model of Machinery for (National Gas & Oil Engine Co., Ltd.), 357*
Whalley, W. C. R., on Cathodic Protection in Middle East, 650
Wheels, Gear. See *Gears; Gearing; Marine Propulsion*
— Grinding. See *Grinding* under *Machine Tools*
— Motor-Car, Developments in, 558
Whipple, R. S., the Late, 820*
White's Marine Engineering Co., Ltd., Test House for Oil-Burning Equipment, 119*
Whiteinch-Linthouse Tunnel under River Clyde, 361
Whitlock Brothers, Ltd., Tractor Transpor Box, 790*
Whittemore, J., on Mercury-Vapour Discharge Lamps for Photo-Printing, 547*
Wickman, Ltd., Automatic Six-Spindle Machine Tools for 1-in. Bars, 249*
Widdup, H., & Co., Ltd., 440-s.h.p. Marine Diesel Engine, 321*
Wiggin, H., & Co., Ltd., Wrought Nickel-Molybdenum Alloys, 248
Wild, M. B., & Co., Ltd., Portable Petrol-Driven Elevator for Building Materials, 189
Williams, Dr. C. G., on Engine Research on Fuels and Lubricants, 37*
Williams, F., on Sound and Television Broadcasts of Coronation, 775
Williams & James (Engineers), Ltd., Instrument for Regulating Metered Air Supplies, 63*; Oil-Free Air Compressor, 326*; 4-in. Stroke Air Compressor, 326*
Williamson, J., the Late, 276
Wilson, A., the Late, 686
Wilson, Dr. B. W., on Measurement of Wave Heights in Model of Table Bay Harbour, 245*, 267*
Wilson, L., & Sons, Ltd., Stockwell Omnibus Garage, 703*
Wilson, R., the Late, 270
Wilton and Billingham Works of Imperial Chemical Industries, Ltd., 94
Wiltshire, H. C., Report on Teaching and Practice of Production Management in United States, 689. See *Addenda*, 813. See LETTER, 756
Wimbledon and Leatherhead Factories of Foster Transformers, Ltd., 471*
Wimpenny, J. C., on Stability and Control in Aircraft Design, 682
Wimpey, G., & Co., Ltd., Wellpoint with Improved Filter, 182; Singapore Power Station, 283. See *Erratum*, 384
Winch, Cargo, Self-Contained (Clarke Chapman & Co., Ltd.), 354*
— Heavy-Duty, for Tractors (T. T. Boughton & Sons, Ltd.), 790*
Winchester Bottles, Specification, 798
Wind Generator, 8-kW, Ateliers et Chantiers de France, S.A., 33*
— — 100-kW, Enfield Cables, Ltd., 33*
— Observations at Automatic Radar Meteorological Station, 299*
— Tunnels. See *Aeronautics*
Winder, Sir A., the Late, 819
Winding, Machine, 1,225-h.p. Automatic Alternating-Current (Metropolitan-Vickers Electrical Co., Ltd.), 774*
— — Colliery, 3,800-h.p. (Markham & Co., Ltd.), 59*
Wing for Aircraft, Moulded-Plastic (Bristol Aeroplane Co., Ltd.), 405
— Skin, Redux-Bonded for Aircraft (Short Brothers & Harland, Ltd.), 405
Wire-Knitting Machine, Circular, 117*
— Mesh, Automatic Welding Press for (Asea Electric, Ltd.), 291*
— Prestressing, for Concrete Grain Silo at Dublin, 570*
— Rope for Aircraft, Swaged Cable-End Assemblies for, Specification, 143
— — and Fasteners, Dynamic Testing of (E. H. Bentall & Co., Ltd.), 734*
— — Sling, Braided (British Ropes, Ltd.), 357*
— Steel, Its Manufacture and Properties (Review), 453
— Tungsten, Coiled-Coil, for Cathodes, Production of, 389*
Wiredrawing Machine (Marshall Richards Machine Co., Ltd.), 684*
Wireless Telegraphy. See *Radio*
— Telephony. See *Radio*
Wiseman, A., & Co., Ltd., Geared Electric Motor, 356*
Wiseman, D. F., & Sons, Ltd., Control Valves for High Air-Mass Flows, 705*
Wöhler's Tests. See *Fatigue* under *Tests (Materials)*
Wolf Electric Tools, Ltd., Portable Electric Grinder, 575*
Wollaston, W. H., 1766-1828, 614*. See 269, 461
Women Workers. See *Labour*
Wood Poles for Overhead Lines, Specification, 79
Woodley, D. R., on Case for Palletisation, 522
Woodworking Machinery. See *Machine Tools*
Woolwich Arsenal, Future of, Report on, 147
Workmen. See *Labour*

Works:
Alsing Road Works, Sheffield, Millspaugh Centrifugal-Casting Foundry, 594, 629*
Annfield Plain Factory of Ransome & Marles Bearing Co., Ltd., 467, 555
Aycliffe Factory of Bakelite, Ltd., 715*
Billingham and Wilton Works of Imperial Chemical Industries, Ltd., 94
Cable Factory of W. T. Henley's Telegraph Co., Ltd., 94
Cleveland Works of Dorman, Long & Co., Ltd., 94
Die-Casting Foundry of Non-Ferrous Die Casting Co., Ltd., Reorganisation of, 185*
Earlsfield Diesel-Engine Factory, Peterborough, of F. Perkins, Ltd., 12*
East Kilbride Aero-Engine Factory, 717*
Engineering Works, Employment of Women. See *Labour*
Fallings Park Factory of Guy Motors, Ltd., Extension to, 108*
Gasworks. See *Gasworks*
Gateshead Works of Clarke, Chapman & Co., Ltd., 95
Hartlepool Works of Richardsons, Westgarth & Co., Ltd., 94
Heaton Works of C. A. Parsons & Co., Ltd., 93; Design and Research Building, 713*
Hebburn Works of Bushing Co., Ltd., 95
— — of Pyrotenax Ltd., 95
— — of A Reyrolle & Co., Ltd., 93
Lackenby Steelworks of Dorman, Long & Co., Ltd., Opening of, 453
Leatherhead and Wimbledon Factories of Foster Transformers, Ltd., 471*
Works—*continued.*
Lemington Glass Works of General Electric Co., Ltd., 94
Loughborough Switchgear Factory, Brush Electrical Engineering Co., Ltd., 569*
Oldbury Works of Accles & Pollock, Ltd., 161*, 193*, 225*
Pipe Bending and Fabrication Shop, C. A. Parsons & Co., Ltd., 313*
Preston and Stafford Works of English Electric Co., Ltd., 19
Rugby Works, British Thomson-Houston Co., Ltd., Heavy Machine Shop, 97*
Rye-Arc, Ltd., Reinforced-Concrete Workshop, 93*
Shepcote Lane Plant of Firth-Vickers Stainless Steels, Ltd., 332*, 362*. See LETTER, 436*
Sickla Works, Stockholm, of Atlas Diesel Co., 641*
Stafford and Preston Works of English Electric Co., Ltd., 19
Tank Factory, Leyland, Lancashire, 630*
West Hartlepool Works of Siemens Brothers & Co., Ltd., 94
Wimbledon and Leatherhead Factories of Foster Transformers, Ltd., 471*
Workshop, Reinforced-Concrete, for Rye-Arc, Ltd., 93*
Works Management, Motion and Time Studies, Use and Techniques of, 390
— — Production Management in United States, Teaching and Practice of, 689. See *Addenda*, 813. See LETTER, 756
— — Trusts and Foundations (Review), 227
— Ministry of, Prestressed-Concrete Multi-Storey Building, 667
Workshops. See *Works*; *Machine Tools*
— Training. See *Education*
World Air Speed Record by "Hawker Hunter," 338, 374*
— Enterprise, Oil Tanker, "Weldex" Bled-Steam Air Preheater for, 417*
— Fuel Resources, Estimation of Life, 618
— Great Bridges (Review), 546
— Mineral Resources, Their Occurrence and Utilisation, 562
Wrecks. See *Accidents*
— Raising. See *Salvage*
Wright Brothers Jubilee, British Celebration of, 818, 823
Wright, J., on Isodynamometer, 665*. See 517
Wright, Sir J., the Late, 114, 148*, 213
— Lecture on Buckling and Stability in Aircraft, 371
— — on Steelmaking Related to Blast-Furnace Practice, by J. Mitchell, 701
Wright, W. and O., Aeronautical Work of, 737*, 753. See *Errata*, 791
Wylie, Shanks and Wylie, Aero-Engine Factory at East Kilbride, 717*
Wyoming, Five Mile Creek, and Sunshine Creek, Sediment Problems in, 3*

X.

X-RAY Films for Crystallography, Dimensions of, Specification, 606
Xylonite Models, Stress Determination. See *Photo-Elastic*

Y.

YACHT, Royal, "Britannia," Preliminary Trials, 622
Yates, W., the Late, 135
Year Books. See LITERATURE INDEX
Yeast Factory, Dovercourt, Equipment at, 76*
Yield Point Phenomena and Stretcher-Strain Markings in Aluminium Alloys, 439
Yorke, R., on Dynamical Analogies, 763*. See 517
Yorkshire Engine Co., Ltd., Industrial Shunting Locomotive, 59*
— South, Notes from. See *Lancashire and South Yorkshire*
Yugoslav Meeting, International Electrotechnical Commission, 211

Z.

ZEZERE Substation, Portugal, 660*
Zinc Diffusion in Aluminium, 470
Zones, Smokeless, in Towns, 83, 498
Zuider Zee, Drainage of, 403
Zürich, Switzerland, Electricity Supply Schemes for, 129*
Zwicky, Ltd., Hand-Operated High-Pressure Pump, 324*; Dual-Type Filter, 324

LITERATURE.

ABRASION and Wear, Publication of Rubber Stichting, Delft, 287
A.C. Networks and Transmission Lines, by Dr. T. F. Wall, 99
Action, Facts and Files in Business and Public Affairs, Part 2, Filing, Indexing and Circulation, by Dr. J. E. Holmstrom, 484
Admiralty Ship Welding Committee Publication. S.S. Ocean Vulcan Sea Trials: The Forces Acting on the Ship at Sea, 165
Advanced Mathematics in Physics and Engineering, by Prof. A. Bronwell, 613
Advanced Mechanics of Materials, by Prof. F. B. Seely and Prof. J. O. Smith, 607
Aerodynamics, Propeller and Helicopter, Elements of, by Prof. D. O. Dommasch, 387
Aircraft Propulsion: Theory and Performance, by Dr. A. W. Morley, 134
Airport Visitor, edited by Sqd. Ldr. N. J. Freeman and G. D. H. Linton, 191
Alternating-Current Electrical Engineering, by P. Kemp, 480
Alternating-Current Machines, Theory, Design and Application of, Including Fractional Horse-Power Motors: Induction Motor, by Dr. H. Vickers, 255
American Society for Testing Materials Publication on Symposium on Continuous Analysis of Industrial Water and Industrial Waste Water, 416
American Society for Testing Materials, Manual on Industrial Water, 672
Analysis, Continuous, of Industrial Water and Industrial Waste Water. Publication of American Society for Testing Materials, 416
Analysis, Dimensional, and Physical Similarity, by Prof. W. J. Duncan, 516
Analysis, Spectrographic, of Low-Alloy Steels. Report of British Iron and Steel Research Association, 287
Analysing Structural Frames, Hardy Cross Procedure of, by S. Zaytzeff, 384
Annuals and Reference Books, 123, 191, 221, 253, 352, 511, 640
Arctan x, Table of. United States National Bureau of Standards Applied Mathematics Series No. 26, 221
Arid Zone Hydrology, Reviews of Research on, 319
Astronomy for Surveyors, Elements of, by R. W. Chapman. Revised by J. B. Mackie, 387
Atomisation of Liquid Fuels, by Prof. E. Giffen and Dr. A. Murasszew, 803

BEAM Engines, Rotative, and Cornish Pumping Engines: An Illustrated Survey, 581
Billings and Water Power in Brazil, by A. J. Ackerman, 803
B.I.M.C.A.M. Handbook, 1953, 191
Blasting, Rock, Manual of, edited by K. H. Fraekel, 64
Books, New, Notes on, 31, 64, 96, 127, 192, 255, 287, 319, 351, 384, 415, 448, 479, 576, 607, 672, 704, 736, 800, 831
Books Received, 32, 64, 96, 128, 160, 192, 224, 256, 288, 320, 352, 384, 416, 448, 480, 544, 576, 608. 640, 672, 704, 736, 768, 832
Boreholes and Wells for Water Supply, by J. E. Dumbleton, 192
Brazil, Water Power in, and Billings, by A. J. Ackerman, 803
Bridges, World's Great, by H. S. Smith, 546
British Electrical and Allied Industries Research Association, Researches by: Circuit Breaking. Edited by H. Trencham, 644
British Industrial Measuring and Control Apparatus Manufacturers' Association, Handbook, 1953, 191
British Motor Vehicles, Servicing Guide to, Vol. 2, by J. N. McHattie, 511
British Products and Canadian Distributors, Cabma Register of, 253
British Regional Geology, Northern England, 448
British Standards Institution Yearbook, 123,
Building Fires, Investigations on. Part VI, Fire Resistance of Reinforced-Concrete Columns, by Dr. F. G. Thomas and C. T. Webster, 736
Business and Public Affairs, Facts, Files and Action in. Part 2, Filing, Indexing and Circulation, by Dr. J. E. Holmstrom, 484

CABLES, Power: Their Design and Installation, by C. C. Barnes, 4
Cabma Register of British Products and Canadian Distributors, 253
Calcul des Conduits d'Eau avec Cheminées d'Equilibre. Prepared under Direction of Prof. A. Ghizzetti, 517
Calcul des Constructions Hyperstatiques: La Methode de Hardy Cross et des Simplifications, by S. Zaytzeff, 384
Canadian Distributors and British Products, Cabma Register of, 253
Carbon, Active, by Prof. C. Courty, 4
Carrier Current on Power Lines, by A. Chevallier, 607
Catalogues, 31, 64, 96, 128, 159, 175, 213, 286, 320, 384, 416, 480, 525, 576, 608, 640, 704, 768, 797, 831
Cement and Concrete Association. Prestressed-Concrete Statically Indeterminate Structures: Symposium Proceedings, edited by Dr. R. P. Andrew and P. J. Witt, 64
Charbons Actives (Adsorption des Gaz et des Vapeurs), by Prof. C. Courty, 4
Chebyshev Polinomials $Sn\ (x)$ and $Cn\ (x)$, Tables of. United States National Bureau of Applied Mathematics Publication, 352
Circuit Breaking, Researches by British Electrical and Allied Industries Research Association, Edited by H. Trencham, 644
Circuits and Machines: Introductory Electrical Engineering, by Prof. C. H. Wills and Asst. Prof. H. M. Chandler, Jr., 740
Circulation, Filing and Indexing. Part 2 of Facts, Files and Action in Business and Public Affairs, by Dr. J. E. Holmstrom, 484
Civilization and Engineering, by Prof. J. K. Finch, 195
Colliery Year Book and Coal Trades Directory, 1953, 352
Columns, Reinforced-Concrete, Fire Resistance of. Part VI of Investigations on Building Columns, by Dr. F. G. Thomas and C. T. Webster, 736
Comet and Rocket Orbits, Tables for, by S. Herrick, 613
Concrete, Prestressed, by Y. Guyon. Edited by W. M. Johns, 31
Concrete, Prestressed, Statically Indeterminate Structures: Symposium Proceedings, edited by Dr. R. P. Andrew and P. J. Witt, 64
Concrete, Reinforced, Columns, Fire Resistance of. Part VI of Investigations on Building Columns, by Dr. F. G. Thomas and C. T. Webster, 736
Constructions Hyperstatiques, Calcul des: La Methods de Hardy Cross et des Simplifications, by S. Zaytzeff, 384
Continuous Analysis of Industrial Water and Industrial Waste Water, Symposium on. Publication of American Society for Testing Materials, 416
Control of Electric Motors, by P. B. Harwood, 127
Cornish Pumping Engines and Rotative Beam Engines: An Illustrated Survey, 581
Counter, Luminescence and Scintillation, by Dr. S. C. Curran, 644
Cours de Mecanique, Vol. I, Statique, by Prof. H. Faure, 800
Current, Carrier, on Power Lines, by A. Chevallier, 607

DECISION, Time for: An Industrialist Looks at Life, by F. B. Willmott, 256
Department of Scientific and Industrial Research Publication. British Regional Geology, Northern England, 448
Design of Ferrous and Non-Ferrous Pressure Vessels and Tanks, Manual of, by K. Siemon, 415
Design, Simplified, of Roof Trusses for Architects and Builders, by Prof. H. Parker, 319
Design of Valves and Fittings, by G. H. Pearson, 134
Diagrammes Enthalpie-Entropie: Applications à l'Air et aux Gaz de Combustion, by Dr. P. Chambadal, 484
Diamond Technology: Production Methods for Diamond and Gem Stones, by P. Grodzinski, 676
Diesel Electrique et Traction Electrique, by P. Patin, 64
Dimensional Analysis and Physical Similarity, by Prof. W. J. Duncan, 516
Dimensioning of Engineering Drawings, by Dr. W. Abbott, 676
Directory and Handbook, Metal Industry, 1953, 191
Directory, Iron and Steel, 123
Drawings, Engineering, Dimensioning of, by Dr. W. Abbott, 676

ECONOMICS, Fifty Years of, by Prof. H. O. Meredith, 192
Electric and Diesel Traction, by P. Patin, 64
Electric Motors, Control of, by P. B. Harwood, 127
Electric Resistance Heating, 576
Electrical Engineering, Alternating-Current, by P. Kemp, 480
Electrical Engineering, Introductory: Circuits and Machines, by Prof. C. H. Wills and Asst. Prof. H. M. Chandler, Jr., 740
Electrical Manufacturers, 1875-1900, by H. C. Passer, 484
Electrical Power, Generation, Transmission and Utilisation of, by Dr. A. T. Starr, 127
Electricity Supply, Garcke's Manual of, edited by F. C. Garrett, 253
Electricity Undertakings of the World, Edited by S. G. Rattee, 640
Electro-Magnetic Machines, by R. Langlois-Berthelot, 771
Electron Tubes in Industry, by K. Henney and J. D. Farnestock, 32
Electronics, Principles of, by Dr. E. Buckingham and E. M. Price, 800
Elements of Astronomy for Surveyors, by R. W. Chapman. Revised by J. B. Mackie, 387
Elements of Propeller and Helicopter Aerodynamics, by Prof. D. O. Dommasch, 387
Elliptic Functions, Introduction to, with Applications, by F. Bowman, 831
Emission, Spectroscopy of, and Its Applications, by P. Michel, 415
Engines, Cornish Pumping, and Rotative Beam Engines: An Illustrated Survey, 581
Engineering and Civilization, by Prof. J. K. Finch, 195
Engineering Drawings, Dimensioning of, by Dr. W. Abbott, 676
Engineering, Electrical, Alternating-Current, by P. Kemp, 480
Engineering Materials, Technology of, by B. R. Hilton, 387
Engineering and Physics, Advanced Mathematics in, by Prof. A. Bronwell, 613
Engineering, Public Health, by P. C. G. Isaac, 134
Engineering, Railway, Introduction to, by R. A. Inglis, 672
Enthalpy-Entropy Diagrams: Application to Air and Gas Combustion, by Dr. P. Chambadal, 484

FACTS, Files and Action in Business and Public Affairs. Part 2, Filing, Indexing and Circulation, by Dr. J. E. Holmstrom, 484
Farm Power, by Prof. B. D. Moses and Prof. K. R. Frost, 31
Fens and Vermuyden, by L. E. Harris, 706
Ferrous and Non-Ferrous Pressure Vessels and Tanks, Manual for Design of, by K. Siemon, 415
Fifty Years of Economics, by Prof. H. O. Meredith, 192
Fighting Ships, Jane's, 1953–54, Edited by R. V. B. Blackman, 740
Files, Facts and Action in Business and Public Affairs. Part 2, Filing, Indexing and Circulation, by Dr. J. E. Holmstrom, 484
Fires, Building, Investigations on. Part VI, Fire Resistance of Reinforced-Concrete Columns, by Dr. F. G. Thomas and C. T. Webster, 736
Fittings and Valves, Design of, by G. H. Pearson, 134
Flames: Their Structure, Radiation and Temperature, by Dr. A. G. Gaydon and Dr. H. G. Wolfhard, 418
Fluid Mechanics for Engineers, Survey of, by Prof. M. Sédille, 351
Formulae, Physical, by Dr. T. S. E. Thomas, 255
Foundations of Mathematics, Introduction to, by Prof. A. L. Wilder, 644
Foundations and Trusts. Compiled by G. W. Keeling and edited by T. Landau, 227
Fuels, Liquid, Atomisation of, by Prof. E. Giffen and Dr. A. Murasszew, 803
Functions, Elliptic, Introduction to, with Applications, by F. Bowman, 831

GARCKE'S Manual of Electricity Supply, edited by F. C. Garrett, 253
Gear Lubrication. Publication of C. C. Wakefield and Co., Ltd., 191
Gem and Diamond Stones, Production Methods for: Diamond Technology, by P. Grodzinski, 676
Generation, Transmission and Utilisation of Electrical Power, by Dr. A. T. Starr, 127
Geology, British Regional, Northern England, 448
Guide to Coalfields, 1953, 221
Guide, Servicing, to British Motor Vehicles, Vol. 2, by J. N. McHattie, 511

HANDBOOK and Directory, Metal Industry, 1953, 191
Hardy Cross Procedure for Analysing Structural Frames, by S. Zaytzeff, 384
Heat Engines, Thermodynamics Applied to, by Dr. E. H. Lewitt, 771
Heating, Electric Resistance, 576
Helicopter and Propeller Aerodynamics, Elements of, by Prof. D. O. Dommasch, 387
Hydrology, Arid Zone, Reviews of Research on, 319
Hyperstatiques, Constructions, Calcul des: La Methode de Hardy Cross et des Simplifications, by S. Zaytzeff, 384

INDEXING, Filing and Circulation. Part 2, of Facts, Files and Action in Business and Public Affairs, by Dr. J. E. Holmstrom, 484
Indian Railways: One Hundred Years, 1853–1953, by J. N. Sahni, 704
Induction Motor. Theory, Design and Application of Alternating-Current Machines, Including Fractional Horse-Power Motors, by Dr. H. Vickers, 255
Inductors and Transformers, Small, by K. A. Macfadyen, 479
Industrial Physics, by J. Izard, 253
Industrial Water, Manual on, 672
Industrialist Looks at Life: Time for Decision, by F. B. Willmott, 256

Inspection, Mechanical, by Prof. W. H. Armstrong, 32
Instrument Manual, 511
Interviewing for Selection, 831
Introduction to Elliptic Functions, with Applications, by F. Bowman, 831
Introduction to Foundations of Mathematics, by Prof. A. L. Wilder, 644
Introduction to Railway Engineering, by R. A. Inglis, 672
Introductory Electrical Engineering: Circuits and Machines, by Prof. C. H. Wills and Asst. Prof. H. M. Chandler, Jr., 740
Investigations on Building Fires. Part VI, Fire Resistance of Reinforced-Concrete Columns, by Dr. F. G. Thomas and C. T. Webster, 736
Iron and Steel Directory, 123
Iron and Steel, Manufacture of, by D. J. O. Brandt, 740

JANE'S FIGHTING SHIPS, 1953–54, Edited by R. V. B. Blackman, 740
J. & P. Switchgear Book, by R. T. Lythall, 800

KINEMATICS of Mechanisms, by Dr. Ing. N. Rosenauer, and Prof. A. H. Willis, 613

LAUNDRIES and Laundry Requisites, 1953, 221
Lenses, Photographic, Method for Determining Resolving Power of, by F. E. Washer and I. C. Gardner, 581
Liquid Fuels, Atomisation of, by Prof. E. Giffen, and Dr. A. Muraszew, 803
Liquid Fuels, Manufacture and Properties of, by Dr. Ing. F. Spausta, 96
Literature, 4, 99, 134, 165, 195, 227, 387, 418, 453, 484, 516, 546, 581, 613, 644, 676, 706, 740, 771, 803
Locomotive, Steam, in America, by A. W. Bruce, 273
Low-Alloy Steels, Spectrographic Analysis of. Report of British Iron and Steel Research Association, 287
Lubricant Testing, by E. G. Ellis, 165
Lubrication, Gear. Publication of C. C. Wakefield & Co., Ltd., 191
Luminescence and Scintillation Counter, by Dr. S. C. Curran, 644

MACHINES and Circuits: Introductory Electrical Engineering, by Prof. C. H. Wills and Asst. Prof. H. M. Chandler, Jr., 740
Machines, Electro-Magnetic, by R. Langlois-Berthelot, 771
Magnets, Permanent, Publication of the Permanent Magnet Association, 64
Management, Junior, Short Philosophy for, 136
Manual for Design of Ferrous and Non-Ferrous Pressure Vessels and Tanks, by K. Siemon, 415
Manual of Electricity Supply, Garcke's, edited by F. C. Garrett, 253
Manual on Industrial Water, 672
Manual, Instrument, 511
Manual on Rock Blasting, edited by K. H. Fraenkel, 64
Manufacture of Iron and Steel, by D. J. O. Brandt, 740
Manufacturers, Electrical, 1875-1900, by H. C. Passer, 484
Mass Spectroscopy in Physics Research. United States National Bureau of Standards Circular, 448
Materials, Advanced Mechanics of, by Prof. F. B. Seely and Prof. J. O. Smith, 607
Materials, Strength of, by Prof. G. Manuel, 704
Mathematics, Advanced, in Physics and Engineering, by Prof. A. Bronwell, 613
Mathematics, Introduction to Foundations of, by Prof. A. L. Wilder, 644
Mecanique Ondulatoire, by T. Kehan and B. Kwal, 228
Mechanical Inspection, by Prof. W. H. Armstrong, 32
Mechanics. Vol. I, Statics, by Prof. H. Faure, 800
Mechanics, Advanced, of Materials, by Prof. F. B. Seely and Prof. J. O. Smith, 607
Mechanics, Fluid, for Engineers, Survey of, by Prof. M. Sédille, 351
Mechanisms, Kinematics of, by Dr. Ing. N. Rosenauer and Prof. A. H. Willis, 613
Metal Industry Handbook and Directory, 1953, 191
Metallic Surfaces, Properties of, 516
Metals, Institute of, Publication on Properties of Metallic Surfaces, 516
Method for Determining Resolving Power of Photographic Lenses, by F. E. Washer and I. C. Gardner, 581
Motion and Time Study Applications, by Prof. R. M. Barnes, 479
Motor, Induction. Theory, Design, and Application of Alternating-Current Machines, Including Fractional Horse-Power Motors, by Dr. H. Vickers, 255
Motor Vehicles, British, Servicing Guide to, Vol. 2, by J. N. McHattie, 511

NATIONAL Institute of Industrial Psychology, Interviewing for Selection, 831
New Books, Notes on, 31, 64, 96, 127, 192, 255, 287, 319, 351, 384, 415, 448, 479, 576, 607, 672, 704, 736, 800, 831
Northern England, British Regional Geology, 448
Notes on New Books, 31, 64, 96, 127, 192, 255, 287, 319, 351, 384, 415, 448, 479, 576, 607, 672, 704, 736, 800, 831

OCEAN Vulcan, S.S., Sea Trials: The Forces Acting on the Ship at Sea. Report of Admiralty Ship Welding Committee, 165
Orbits, Rocket and Comet, Tables for, by S. Herrick, 613

PERMANENT Magnets. Publication of the Permanent Magnet Association, 64
Petroleum, Science of, Vol. V, Part II. Synthetic Products of Petroleum. Edited by Dr. B. T. Brooks and Dr. A. E. Dunstan, 228
Philosophy, Short, for Junior Management, 136
Photographic Lenses, Method for Determining Resolving Power of, by F. E. Washer and I. C. Gardner, 581
Photometry, by Dr. J. W. T. Walsh, 227
Physical Formulae, by Dr. T. S. E. Thomas, 255
Physical Similarity and Dimensional Analysis, by Prof. W. J. Duncan, 516
Physics. Vol. I, Mechanics, Heat, Properties of Matter, and Sound, by L. S. Powell, 736
Physics and Engineering, Advanced Mathematics in, by Prof. A. Bronwell, 613
Physics Research, Mass Spectroscopy in. United States National Bureau of Standards Circular, 448
Physique Industrielle, by J. Izard, 253
Pipefitters' Handbook, by F. R. Lindsey, 352
Plants, Power, for Aircraft, by Prof. J. Liston, 99
Polinomials, Chebyshev, $Sn(x)$ and $Cn(x)$, Tables of. United States National Bureau of Applied Mathematics Publication, 352
Power Cables: Their Design and Installation, by C. C. Barnes, 4
Power, Farm, by Prof. B. D. Moses and Prof. K. R. Frost, 31
Power Lines, Carrier Current on, by A. Chevallier, 607
Power Plants for Aircraft, by Prof. J. Liston, 99
Précis de Mécanique des Fluides à l'Usage des Ingénieurs, by Prof. M. Sédille, 351
Presses and Presswork, by J. A. Grainger, 287
Pressure Vessels and Tanks, Ferrous and Non-Ferrous, Manual for Design of, by K. Siemon, 415
Presswork and Presses, by J. A. Grainger, 287
Prestressed Concrete, by Y. Guyon. Edited by W. M. Johns, 31
Prestressed-Concrete Statically Indeterminate Structures: Symposium Proceedings. Edited by Dr. R. P. Andrew and P. J. Witt, 64
Principles of Electronics, by Dr. E. Buckingham and E. M. Price, 800
Propeller and Helicopter Aerodynamics, Elements of, by Prof. D. O. Dommasch, 387
Properties of Metallic Surfaces, 516
Public and Business Affairs, Facts, Files and Action in. Part 2, Filing, Indexing and Circulation, by Dr. J. E. Holmstrom, 484
Public Health Engineering, by P. C. G. Isaac, 134
Pumping Engines, Cornish, and Rotative Beam Engines: An Illustrated Survey, 581

RADIO Engineering, Vol. II, by Dr. E. K. Sandeman, 352
Railway Engineering, Introduction to, by R. A. Inglis, 672
Railways, Indian: One Hundred Years, 1853-1953, by J. N. Sahni, 704
Reference Books and Annuals, 123, 191, 221, 253, 352, 511, 640
Register of British Products and Canadian Distributors, Cabma, 253
Reinforced-Concrete Columns, Fire Resistance of. Part VI of Investigations on Building Fires, by Dr. F. G. Thomas and C. T. Webster, 736
Research on Arid Zone Hydrology, Reviews of, 319
Researches by British Electrical and Allied Industries Research Association: Circuit Breaking. Edited by H. Trencham, 644
Resistance Heating, Electric, 576
Résistance des Matériaux, by Prof. G. Manuel, 704
Reviews of Research on Arid Zone Hydrology, 319
Rock Blasting, Manual of, edited by K. H. Fraenkel, 64
Rocket and Comet Orbits, Tables for, by S. Herrick, 613
Roof Trusses, Simplified Design of, for Architects and Builders, by Prof. H. Parker, 319
Rotative Beam Engines and Cornish Pumping Engines: An Illustrated Survey, 581

SCIENCE of Petroleum, Vol. V, Part II. Synthetic Products of Petroleum. Edited by Dr. B. T. Brooks and Dr. A. E. Dunstan, 228
Scintillation and Luminescence Counter, by Dr. S. C. Curran, 644
Sea Trials, S.S. Ocean Vulcan: The Forces Acting on the Ship at Sea. Report of Admiralty Ship Welding Committee, 165
Selection, Interviewing for, 831
Servicing Guide to British Motor Vehicles, Vol. 2, by J. N. McHattie, 511
Short Philosophy for Junior Management, 136
Simplified Design of Roof Trusses for Architects and Builders, by Prof. H. Parker, 319
Slide Rule, by Prof. J. E. Thompson, 256
Small Transformers and Inductors, by K. A. Macfadyen, 479
Sound Barrier, by N. Duke and E. Lanchbery, 576
Sound: A Physical Text-Book, by Dr. E. G. Richardson, 384
Spectrographic Analysis of Low-Alloy Steels. Report of British Iron and Steel Research Association, 287
Spectroscopie d'Emission et ses Applications, by P. Michel, 415
Spectroscopy, Mass, in Physics Research. United States National Bureau of Standards Circular, 448
Stahldraht: Seine Herstellung und Eigenschaften, by Prof. A. Pomp, 453
Standards Institution, British, Yearbook, 123
Standards, Tyre and Wheel: Car, Commercial Vehicle, Cycle and Motor Cycle, 1953, 640
Statically Indeterminate Structures, Prestressed-Concrete: Symposium Proceedings. Edited by Dr. R. P. Andrew and P. J. Witt, 64
Statics. Vol. I, of Mechanics, by Prof. H. Faure, 800
Steam Locomotive in America, by A. W. Bruce, 273
Steel and Iron Directory, 123
Steel and Iron, Manufacture of, by D. J. O. Brandt, 740
Steels, Low-Alloy, Spectrographic Analysis of. Report of British Iron and Steel Research Association, 287
Strength of Materials, by Prof. G. Manuel, 704
Structural Frames, Hardy Cross Procedure of Analysing, by S. Zaytzeff, 384
Structures, Statically Indeterminate, Prestressed-Concrete: Symposium Proceedings. Edited by Dr. R. P. Andrew and P. J. Witt, 64
Surfaces, Metallic, Properties of, 516
Survey of Fluid Mechanics for Engineers, by Prof. M. Sédille, 351
Surveyors, Elements of Astronomy for, by R. W. Chapman. Revised by J. B. Mackie, 387
Switchgear Book, J. and P., by R. T. Lythall, 800
Symposium on Continuous Analysis of Industrial Water and Industrial Waste Water. Publication of American Society for Testing Materials, 416

TABLE of Arctan x. United States National Bureau of Standards, Applied Mathematics Publication, 221
Tables of Chebyshev Polinomials $Sn(x)$ and $Cn(x)$. United States National Bureau of Standards, Applied Mathematics Publication, 352
Tables for Rocket and Comet Orbits, by S. Herrick. United States National Bureau of Standards, Applied Mathematics Publication, 613
Tanks and Pressure Vessels, Ferrous and Non-Ferrous, Manual for Design of, by K. Siemon, 415
Technology, Diamond: Production Methods for Diamond and Gem Stones, by P. Grodzinski, 676
Technology of Engineering Materials, by B. R. Hilton, 387
Thermodynamics, by Prof. Y. Rocard, 195
Thermodynamics Applied to Heat Engines, by Dr. E. H. Lewitt, 771
Time for Decision: An Industrialist Looks at Life, by F. B. Willmott, 256
Time Study and Motion Applications, by Prof. R. M. Barnes, 479
Traction Electrique et Diesel Electrique, by P. Patin, 64
Trade Publications, 31, 64, 96, 128, 159, 175, 213, 286, 320, 384, 416, 480, 525, 576, 608, 640, 704, 768, 797, 831
Transformers and Inductors, Small, by K. A. Macfadyen, 479
Transmission Lines and A. C. Networks, by Dr. T. F. Wall, 99
Transmission, Utilisation and Generation of Electrical Power, by Dr. A. T. Starr, 127
Treibstoffe für Verbrennungsmotoren, by Dr. Ing. F. Spausta, 96
Trusses, Roof, Simplified Design of, for Architects and Builders, by Prof. H. Parker, 319
Trusts and Foundations, Compiled by G. W. Keeling and edited by T. Landau, 227
Tubes, Electron, in Industry, by K. Henney and J. D. Fahnestock, 32
Tyre and Wheel Standards: Car, Commercial Vehicle, Cycle and Motor Cycle, 1953, 640

UNDERTAKINGS, Electricity, of the World, Edited by S. G. Rattee, 640
United States National Bureau of Standards, Applied Mathematics Series No. 9. Tables of Chebyshev Polinomials $Sn(x)$ and $Cn(x)$, 352
United States National Bureau of Standards, Applied Mathematics Series No. 20. Tables for Rocket and Comet Orbits, by S. Herrick, 613
United States National Bureau of Standards, Applied Mathematics Series No. 26. Table of Arctan x, 221
United States National Bureau of Standards, Circular on Mass Spectroscopy in Physics Research, 448
Utilisation, Generation and Transmission of Electrical Power, by Dr. A. T. Starr, 127

VALVES and Fittings, Design of, by G. H. Pearson, 134
Verbrennungsmotoren, Treibstoffe für, by Dr. Ing. F. Spausta, 96
Vermuyden and the Fens, by L. E. Harris, 706
Visitor, Airport, edited by Sqd.-Ldr. N. J. Freeman and G. D. H. Linton, 191

WATER, Industrial, and Industrial Waste Water, Continuous Analysis of. Publication of American Society for Testing Materials, 416
Water, Industrial, Manual on, 672
Water Oscillations, Calculation of. Prepared under Direction of Prof. A. Ghizzetti, 517
Water Power in Brazil and Billings, by A. J. Ackerman, 803
Water Supply, Wells and Boreholes for, by J. E. Dumbleton, 192
Wave Mechanics, by T. Kehan and B. Kwal, 228
Wear and Abrasion, Publication of Rubber Stichting, Delft, 287
Wells and Boreholes for Water Supply, by J. E. Dumbleton, 192
Wheel and Tyre Standards: Car, Commercial Vehicle, Cycle and Motor Cycle, 1953, 640
Wire Drawing, by Prof. A. Pomp, 453
World's Great Bridges, by H. S. Smith, 546

YEARBOOK, British Standards Institution, 123
Year Book, Colliery, and Coal Trades Directory, 1953, 352

ONE-PAGE AND TWO-PAGE PLATES.

PLATE.
I. Engineering Industries of Sheffield (facing page 58)
II. Engineering Industries of Sheffield (between pages 58 and 59)
III. Engineering Industries of Sheffield (between pages 58 and 59)
IV. Engineering Industries of Sheffield (facing page 59)
V. Exhibits at the Paris Air Salon (facing page 74)
VI. Exhibits at the Paris Air Salon (facing page 75)
VII. Metallurgical Industries of Sheffield (facing page 90)
VIII. Metallurgical Industries of Sheffield (facing page 91)
IX. 275-kV Transmission System of the British Electricity Authority (facing page 122)
X. Burvagn Dam; Zürich Electricity Supply System (facing page 130)
XI. Julia Power Station; Zürich Electricity Supply System (facing page 131)
XII. Engineering Hall at the Birmingham Museum of Science and Industry (facing page 215)
XIII. Engineering, Marine and Welding Exhibition at Olympia (facing page 258)
XIV. Engineering, Marine and Welding Exhibition at Olympia (facing page 259)
XV. Engineering, Marine and Welding Exhibition at Olympia (facing page 262)
XVI. Engineering, Marine and Welding Exhibition at Olympia (facing page 263)
XVII. Engineering, Marine and Welding Exhibition at Olympia (facing page 290)
XVIII. Engineering, Marine and Welding Exhibition at Olympia (facing page 291)
XIX. Engineering, Marine and Welding Exhibition at Olympia (facing page 322)
XX. Engineering, Marine and Welding Exhibition at Olympia (facing page 323)
XXI. Engineering, Marine and Welding Exhibition at Olympia (facing page 326)
XXII. Engineering, Marine and Welding Exhibition at Olympia (facing page 327)
XXIII. The Cornish Engine in Cornwall (facing page 340)
XXIV. The Shepcote-Lane Plant of Firth-Vickers Stainless Steels, Limited (facing page 362)
XXV. The Shepcote-Lane Plant of Firth-Vickers Stainless Steels, Limited (facing page 363)
XXVI. The Shepcote-Lane Plant of Firth-Vickers Stainless Steels, Limited (facing page 364)
XXVII. Development and Manufacture of Fluorescent Tubes (facing page 388)
XXVIII. Engineering, Marine and Welding Exhibition at Olympia (facing page 389)
XXIX. Engineering, Marine and Welding Exhibition at Olympia (facing page 394)
XXX. Engineering, Marine and Welding Exhibition at Olympia (facing page 395)
XXXI. Uskmouth Power Station (facing page 554)
XXXII. Prestressed-Concrete Grain Silo at Dublin (facing page 578)
XXXIII. Blithfield Reservoir, Abbots Bromley, Staffordshire (facing page 598)
XXXIV. The Mining Machinery of the Atlas Diesel Company, Stockholm (facing page 642)
XXXV. The Mining Machinery of the Atlas Diesel Company, Stockholm (facing page 643)
XXXVI. 5,400-b.h.p. Gas Turbine for H.M.S. "Grey Goose" (between pages 672 and 673)

PARAGRAPHS.

Accidents and Safety Arrangements:

Goggles, Safety (Trade Publication), 525
Mine Rescue Work, Radio for, 782
Protective Clothing (Trade Publication), 31
Safety Gates in Pit Shafts, 173
Speech Diaphragms for Oxygen Masks, 418
Wood and Its Relation to Fires, Bibliography on, 455

Aeronautics:

Aerial Survey of Reclamation Site, 430
Air Cargo Depot, 471
Aircraft, British Exports of, 205
Aircraft Engineering, Apprentices for, 825
Aircraft Industry, Facilities for (Trade Publication), 831
Aircraft Production, Conference on, 550
Anglo-American Aeronautical Conference, 234
Atmosphere Control in Aircraft Cabins (Trade Publication), 797
"Avon" Engine, Rolls-Royce, 216
"Avon" Jet Engines (Trade Publication), 128
"Avro 504" for Science Museum, 34
Boldon Airport Scheme, 820
Bristol Helicopter for Passenger Services, 61
Britannia Air Liners, Second Production Line for, 822
Britannia Unit of British Overseas Airways Corporation, 254
Casting, Precision, for Use on Aircraft, 782
Civil Airport for Silver City Airways, 648
"Constellation" Aircraft, Charter Service with, 219
de Havilland Propellers, Ltd., Factory for, 631
Delta-Wing Aircraft, 79
Electric Cables for Aircraft, 629
Fairwood Common Aerodrome, Future of, 238
"Firefly" Training Aircraft, Australian, 694
Flying-Boat Charter Services, 205
Flying Display and Exhibition at Farnborough, 271
Fuelling Equipment for Aircraft (Trade Publication), 704
Fuelling Vehicles, Radio-Controlled, for London Airport, 655
Fuselages, Aircraft, Manufacture at Paisley, 494
"Ghost" Jet Engines, Overhaul Life of, 139
Glass, Gilded, for Aircraft Windows, 654
Greatham Airport, Maintenance of, 142
Helicopter, Fairey "Rotodyne," 151
Helicopter Trials on Shipboard, 825
Helicopters, Use in Oil Survey, 682
India, Air Service to, 218
London Airport, Radio-Controlled Fuelling Vehicles at, 655
Powered Flight, 50th Anniversary of, 585
Prestwick Airport, New Runway for, 142
Propeller-Turbine Engines, Test Plant for, 149
Radio Control of High-Speed Aircraft, 149
"Sea Hawk" Aircraft Handed to Royal Navy, 46
Silver City Airways, Airport for, 648
"Stratocruiser" Aircraft, Charter Service with, 219
Supermarine Aviation Works, Anniversary of, 613
Swansea, Airport at, 782
Venezuela, Light Aircraft for, 270
"Viscount" Air Liners, 250
Wind Tunnel for Sir W. G. Armstrong Whitworth and Co., Ltd., 759
Wright Flyer, Development of, *Errata*, 791

Agriculture:

Compressed-Air Equipment for Farms (Trade Publication), 480
Farms, Electricity on, 14
Feeding Stuffs, Plant for, 494
Fluorine Poisoning of Animals, 46
Soya Beans for Feeding Stuffs, Mill for, 750
Tractors, Agricultural (Trade Publication), 797

Alloys. See *Mining and Metallurgy*

Appointments, Awards and Honours:

British Institution of Radio Engineers, Awards by, 314
Brush Scholarship Award, 78
City and Guilds of London Institute, Fellowship Awards by, 252
Civil Engineers, Institution of, Awards by, 224, 771
Cooper's Hill Prize and Medal, Award of, 141
Electrical Engineers, Institution of, Premium Awards of, 70; Appointment of Council, 73
Glasgow University, Appointments at, 782
Guided Weapons, Ministry of Supply, Appointments for, 471
Production Engineers, Institution of, Awards by, 218
Royal Society, Research Appointments of, 139
Royal Society of Edinburgh, Awards by, 78
Shipyard Apprentices, Awards to, 183
Transport, Institute of, Award of Merit, 471

Associations:

Aircraft Constructors, British, Society of, 79, 271
Aluminium Development Association, 213, 271
Aslib, 76, 149
British Association for Commercial and Industrial Education, 271
British Chemical Plant Manufacturers' Association, 158
British Electrical and Allied Industries Research Association, 447
British Electrical and Allied Manufacturers' Association, 203, 532
British Electrical Development Association, 589
British Electricity Authority, 614
British Employers' Confederation, 189
British European Airways, 250, 471
British Gear Manufacturers' Association, 235
British Iron and Steel Federation, 14, 127, 238, 286, 391
British Overseas Airways Corporation, 219, 254
British Plastics Federation, 668
British Road Federation, 523
British Welding Research Association, 5
Building Research, International Council for, 53
Building Technicians, Association of, 678
Cardiff Port Development Association, 398
Cargo-Handling Co-ordination Association, International, 365
Cement and Concrete Association, 108
City Display Organisation, 639
Copper Development Association, 213
European Federation of Chemical Engineering, 37
Federation of British Industries, 189
Gas Council, 475
Gauge and Tool Makers' Association, 102, 239, 286
Hydraulic Research, International Association for, 211
Inland Waterways Association, 622
Iron and Steel Federation, 398
Jute Trade Research Association, British, 398
Kiln Owners' Association, 5
National Smoke Abatement Society, 663
North East Development Association, 654
Office Appliance and Business Efficiency Trades Association, 195
Old N'Ions Association, 525
Pametrada, 430
Prestressed Concrete Group, 27
Prestressing, International Federation of, 27
Radio Industry Council, 546
Refrigeration, International Institute of, 76
Regional Planning Association, 638
Scientific Film Association, 317
Scottish Motor Trade Association, 558
Scrap Iron, Steel and Metal Merchants, National Federation of, 398
Supervising Electrical Engineers, Association of, 34
Vermiculite Exfoliators, Association of, 775
Wear Shipbuilders' Association, 398

Automobiles. See *Motor Cars, Etc.*

Boilers. See *Engines and Boilers*

Bridges and Viaducts:

Aberdeen, Aluminium Bridge at, 366
Barrow-in-Furness, Jubilee Bridge at, 526
Cleaning and Painting Plant for Bridging Material, 110
Conway, New Bridge at, 398
Footbridge Over Clyde at Glasgow, 398
Forth Road Bridge, Case for, 142
International Association for Bridge and Structural Engineering, 203
Mersey, New Bridge Across, 302
Newcastle Swing Bridge, Traffic Over, 110
Peebles, Bridge Over Tweed at, 590
Port Talbot Road Bridge, Scheme for, 558
Shifnal Railway Bridge, Demolition of, 627
South Bank-on-Tees, Bridge at, 174
Tagus, Proposed Bridge Over, 484
Widnes-Runcorn Bridge, Work on, 206
Wolverhampton-Shrewsbury Line, Railway Bridge on, 430

Buildings and Building Construction:

Air Conditioning of Office Building in Toronto, 586
Aluminium Units for School Building, 718
Armstrong Whitworth's Works at North Shields, 654
Birmingham, Building By-Laws in, 526
Birmingham, Road Widening at, 206, 718
Black Country, Motor-Road Plan for, 206
Brick-Making Industry in Wales, 622
Bricks, Perforated, Use of, 366
Builders' Machines, Advice on Care of, 318
Building Research in India, 586
Building Research, International Council for, 53
Building Research Station, Films from, 439
Building Technicians' Diary, 678
Bulldozers (Trade Publication), 384
Civil Engineers' Diary, 768
Contractors' Equipment (Trade Publication), 797
"Crofter Counties," Road Scheme for, 110
Cumberhauld-Condorrat Area, New Town in, 270

Buildings and Building Construction—*continued.*

Derelict Land, Reclamation of, 78, 814
Earth-Moving Equipment (Trade Publication), 286
England and Wales, Road Construction Between, 526
Exhibition Stands Built from Standard Units, 639
"Flatted" Factory, Construction at Walsall, 142
"Flying Arches" at Chorley, 469
Houses, Glasgow, Rapid Construction of, 452
Houses, Prefabricated, 590
House Transport in Desert, 680
Howden-Jarrow Road Tunnel, 366
Light Alloys for Structural Work (Trade Publication), 159
Loch Lomond, Roads Along, 334
Method Study in Building, 238
Midlands Roads, Condition of, 750
Plastic Panelling, Use for School Construction, 558
Power-Transmission Factory, Construction of, 558
Regional Planning and Development, 638
Road Construction in Scotland, 110, 739
Road-Making Machines, Films on, 589
Rotherham Development Plan, Objections to, 462
Scottish Roads, Need for Improvements to, 590
Scrapers (Trade Publication), 384
Sheffield Works, Extensions to, 270
Shropshire, Landslip in, 174
Skyscraper, Aluminium Facing Panels for, 383
Staffordshire, Roads in, 46
Standard Motor Co., Ltd., Factory for, 302
Swansea to Birmingham Highway, 14
Tobacco Factory at Glasgow, 462
Tyne Road Tunnels, Plans for, 654, 670, 782
Victoria Road Tunnel, Improvements to, 270
Whiteinch and Linthouse, Tunnel Connecting, 814

Canals, Rivers and Waterworks:

Aberdeen, Water Supplies to, 302
Bevere Lock, Worcestershire, Silting of, 142
Calder, River, Discharges from Power Station into, 79
Canal Level Restored by Fire Pump, 238
Canal Reservoir as Refuse Tip, 462
Cardiff Reservoir Scheme, Approval of, 142
Cardiff, Water Supplies to, 398
Cheadle Waterworks, Failure of, 110
Clyde Navigation Trust, Report of, 334
Detergents, Discharge into Rivers, 653
Edinburgh, Proposals to Drain Union Canal at, 142
Flooding of Glasgow Underground Railway, 46
Glasgow, Water Supply for, 653
Kirkcaldy, Water Supplies to, 302
Lower Avon, Navigation on, 206, 782
North Sea Floods, Conference on, 127
Parkhead, Covered Reservoir at, 14
Prescelly, Reservoir at, 206
River Pollution, Prevention of, 398, 558
River Tees, Traffic on, 398
River Wear, Widening of, 430
Sand-Asphalt, Use for Repair of Dykes, 781
Severn Barrage Scheme, Position Regarding, 46
Sheffield, Water Supply to, 366
Transportation of Large Pipes for Use at Waterworks, 526
Water Shortage in Airdrie and Coatbridge, 46
Water Tank Constructed of Prestressed Concrete, 174
Worcestershire, Borehole Construction in, 206

Catalogues. See *Trade Publications*

Cement and Concrete:

Blast-Furnace Slag Cement Plant, *Erratum*, 640
Cement Work for Harbours (Trade Publication), 286
Cement Works, Construction of, 799
Dykes Repaired with Sand-Asphalt, 781
Factory for Making Concrete Products, 718
Jointing Compound for Concrete Pavements, 756
Mix Design and Quality Control of Concrete, Symposium on, 108
Prestressed Concrete, Canadian Conference on, 102
Prestressed Concrete, Film Strips on, 459
Prestressing, International Congress on, 27
Transport, Storage and Mixing Equipment (Trade Publication), 31
Water Tank Constructed of Prestressed Concrete, 174

Chemistry. See *Physics and Chemistry*

Coal:

Bishop Auckland, Coal Industry at, 686
Blyth, Coal Exports from, 686
Boring in Residential District, 78

Coal—*continued.*

Briquetting Plant at Brora Colliery, 142
Camborne Pithead Gear, Collapse of, 430
Cannock Chase Pits, Underground Connection Between, 718
Cardowan, Boring for Coal at, 718
Cleaning and Sorting Equipment, Coal (Trade Publication), 512
Coke and Coal Exports, 750
Coke, Large Shipment to Buenos Aires, 238
Coke-Oven Plants, Smoke and Grit from, 110, 238
Collieries, Modernisation of, 270
Colliery Waste, Disposal of, 206
Control of Coal Distribution, End of, 750
Cynheidre Colliery, Sinking of, 270
Douglas Colliery, Atmospheric Tests at, 174
Durham Collieries, Closure of, 142
Durham, Mid-East, Record Production in, 462
Durham Mines, Closure of, 430, 462, 558
Dust Control in Coal Seams, 334, 526
Garesfield Colliery, Closure Deferred, 270
Gasification, Underground, Experiments on, 270
German Firms Employed for Sinking Pits, 14
Hoist, Improved, for Coal Conveying, 302
Holidays, Effect on Coal Production, 142, 206
Home Consumption, Influence on Exports, 622
Horden Colliery, Future of, 782
Hydraulic Transport for Anthracite, 398
Industrial Coal Consumers' Council, 269
Industry, Coal Stocks for Use of, 430
Lancashire and Yorkshire, Coal Situation in, 14
Leith Dock Area, Factories in, 718
Monkton, Coke Works at, 174, 366
Monktonhall Colliery, Construction and Inauguration of, 686, 750
New Brancepath Colliery, Closure of, 206
Northumberland, New Seams in, 750
Nunnery Colliery, Closure of, 302
Opencast Mining at Brynmawr, 270
Opencast Mining, Exploratory Shafts for, 654
Pidwellt Colliery, Threatened Closure of, 654
Pit Props, Imports from France, 558
Pre-Christmas Coal Production, 654
Prices Scheme for Coal, 398
Production in 1953, 228, 352
Purchases from Abroad, 141
Research Workshops for Coal Industry, 216
Rhondda Colliery, Developments at, 398
Rhondda Valley, Pithead Baths in, 334
Rhymney Valley Colliery, Closure of, 814
Rotherham Main Colliery, 718, 750
Salvage of Coal from Wreck, 270
Scotland, Coal Trade of, 302, 814
Shropshire Coalfield, Reconstruction of, 174
Smoke and Grit from Coke-Oven Plants, 110, 238
South Wales Colliery, Developments at, 750
South Yorkshire, Record Production in, 782
Spoil Tip, Construction Refused, 520
Stocks of Coal, 622
Walsend Colliery, Reorganisation at, 398
Walsall Wood Colliery, Pithead Baths at, 302
Waste-Coal, Power Station Using, 32
Watergate Colliery, Underground Railway at, 526
Welsh Coal, Exports of, 494, 654
Welsh Coal Exports, Slump in, 78
Welsh Coal Industry, Production of, 238, 526, 718, 814
Welsh Coal Trade, Effect of Coal Imports on, 110, 174
Westoe Colliery, Developments at, 654
Yorkshire, Colliery Reorganisation in, 334

Colleges. See *Education*

Companies:

Abboflex, Ltd., 428
Aims of Industry, Ltd., 750
Allen, E., & Co., Ltd., 240
Aluminium Co. of Canada, 221
Aluminium Wire & Cable Co., Ltd., 526
Ambrose, Shardlow & Co., Ltd., 110
Anglo-Iranian Oil Co., Ltd., 99, 718
Aquila Airways, Ltd., 205
Arabol Manufacturing Co., Ltd., 425
Armstrong, Sir W. G., Whitworth (Aircraft), Ltd., 759
Armstrong Whitworth & Co. (Pneumatic Tools), Ltd., 462, 654
Arnott, W. H., Young & Co., Ltd., 142
Associated Portland Cement Manufacturers, Ltd., 799
Atlantic Shipbuilding Co., Ltd., 238, 718
Austin Motor Co., Ltd., 302, 750
A.V.P., Ltd., 334
Ayrshire Navigation Co., Ltd., 718
Bagnall, W. G., Ltd., 206
Bakelite, Ltd., 148
Baldwin-Lima-Hamilton Corporation, 444
Berwick Shipbuilding & Engineering Co., 174, 462
Birkett, F. W., & Sons, Ltd., 558
Birlec, Ltd., 110
Birmingham and Midland Motor Omnibus Co., Ltd., 142, 494
Blyth Dry Docks & Shipbuilding Co., Ltd., 366
Bonallack & Sons, Ltd., 827
Bridges, S. N., & Co., Ltd., 735
Brigham & Cowan Ltd., 174, 654
Brightside Foundry & Engineering Co., Ltd., 558

Companies—*continued.*

Bristol Aeroplane Co., Ltd., 61, 686, 822 825
Bristol Aeroplane (Weston), Ltd., 718
British Aluminium Co., Ltd., 265
British Insulated Callender's Cables, Ltd., 416, 558, 629
British Motor Corporation Ltd., 686
British Oil and Cake Mills, Ltd., 494
British Thomson-Houston Co., Ltd., 141, 331, 557
British Tyre and Rubber Co., Ltd., 143
Brook Motors, Ltd., 233, 425
Brown, D., Tractors (Engineering), Ltd., 489
Brown, J., & Co., Ltd., 622
Brown, J., & Co. (Clydebank), Ltd., 430
Brown-Jackson, D., Ltd., 494
Brown Lenox & Co., Ltd., 718
Brush Electrical Engineering Co., Ltd., 78
Bryce Burger, Ltd., 736
Burgess, G. H., & Co., Ltd., 680
Burmah-Shell Refiners, Ltd., 224
Burntisland Shipbuilding Co., Ltd., 654
Cambridge Instrument Co., Ltd., 760
Canadair, Ltd., 822
Cape Asbestos Co., Ltd., 622
Cathodic Corrosion Control, Ltd., 760
Chamberlain Industries, Ltd., 59
Chamberlin & Hill, Ltd., 270
Change Brothers, Ltd., 142, 526
Clarke, Chapman & Co., Ltd., 366
Clyde Alloy Steels Co., Ltd., 654
Coltness Iron Co., Ltd., 558
Consett Iron Co., Ltd., 238, 750
Coventry Victor Co., Ltd., 334
Craven Bros. (Manchester), Ltd., 366
Crown, J., & Sons, Ltd., 622
Daimler Co., Ltd., 174
de Havilland Propellers, Ltd., 631
Denny, W., & Bros., Ltd., 174
Detroit Edison Co., 692
Dorman, Long & Co., Ltd., 110, 238, 366, 453, 526, 782
Dowty Equipment of Canada, Ltd., 489
Doxford, W., & Sons, Ltd., 14, 142, 302, 494
Dunlop Rubber Co., Ltd., 182
Eastwoods, Ltd., 718
Electro Methods, Ltd., 149
E.M.I. Factories, Ltd., 330
Enfield Cables, Ltd., 756
Engineering Diamonds, Ltd., 557
English Electric Co., Ltd., 201, 730
English Steel Corporation, Ltd., 142, 430, 821
Equipment & Engineering Co., Ltd.. 412
Esso Petroleum Co., Ltd., 716
Fairey Aviation Co., Ltd., 151
Fairey Aviation Co. of Australia Pty., Ltd., 694
Fairfield Shipbuilding & Engineering Co., Ltd., 142
Fairmile Construction Co., 174
Ferguson, H., Ltd., 14
Fielding & Platt, Ltd., 73
Fox, S., & Co., Ltd., 142, 462, 782
Fusarc, Ltd., 600
General Electric Co., Ltd., 70, 73, 96, 149, 212, 237, 333, 447, 621, 676, 756, 771, 813, 828
Glamorgan Alkali & Acid Co., Ltd., 654
Gray, W., & Co., Ltd., 622
Greenock Dockyard Co., Ltd., 46
Greenway Brothers, Ltd., 654
Guest, Keen & Nettlefolds (South Wales), Ltd., 494
Guy Motors, Ltd., 46
Habershon, J. J., & Sons, Ltd., 142
Hadfields, Ltd., 782
Hale & Hale (Tipton), Ltd., 169
Hall, A., & Co., Ltd., 654
Hall, Russell & Co., Ltd., 654
Harland & Wolff, Ltd., 252
Hawker Siddeley Group, 477
Hawthorn, R. & W., Leslie & Co., Ltd., 46, 671
Hayward Taylor & Co., 14
Hayward-Tiler Co., Ltd., 621
Hayward, Tyler & Co., Ltd., 238
Head, Wrightson & Co., Ltd., 302, 366
Hedley, T., & Co., Ltd., 302
Heenan & Froude, Ltd., 149
Herbert, A., Ltd., 270, 493, 622
Holland & Hannen and Cubitts, Ltd., 573
Holroyd, J., & Co., Ltd., 206
Holt & Co., 46
Hope, H., & Sons, Ltd., 396
Horsehay Co., Ltd., 430
Howard, J., & Co., Ltd., 14
Hunslet Engine Co., Ltd., 360
Ibberson, G., & Co., Ltd., 622
Ilford, Ltd., 830
Imperial Chemical Industries, Ltd., 494, 558, 600, 814
International Furnace Equipment Co., Ltd., 821
International Harvester Co., Ltd., 174
International Nickel Co. of Canada, 190
Jaguar Cars, Ltd., 334, 750
Jenolite, Ltd., 271
Kincaid, J. G., & Co., Ltd., 46, 366
Laurence, Scott & Electromotors, Ltd., 724
Lee, A., & Sons, Ltd., 174
Leech, W., Ltd., 366
Lewis & Taylor, Ltd., 14
Lucas, J., Ltd., 142
Marconi's Wireless Telegraph Co., Ltd., 13, 605
Massey-Harris-Ferguson, Ltd., 750
McLean, J., & Sons, Ltd., 238
Metropolitan-Vickers Electrical Co., Ltd., 78, 110, 664
Middle Docks & Engineering Co., Ltd., 302
Midland Sheet Co., Ltd., 654
Midland Silicones, Ltd., 143, 640, 716
Mine Safety Appliances Co., 418
Mitchell Construction Co., Ltd., 640
Modern Machine Tools, Ltd., 782
Modern Wheel Drives, Ltd., 638
Morel, Ltd., 302
Motherwell Bridge & Engineering, Ltd., 750
Mountstuart Dry Docks, Ltd., 174
Munro, R. W., Ltd.. 160

Companies—*continued.*

National Gas & Oil Engine Co., Ltd., 373
New Era Industries (Tottenham), Ltd., 254
Newton Chambers & Co., Ltd., 430, 686
Noble & Lund, Ltd., 174
North Eastern Marine Engineering Co. (1938), Ltd., 270
Northern Aluminium Co., Ltd., 279
Norton Grinding Wheel Co., Ltd., 13
Nuffield Metal Products, Ltd., 110
Orient Steam Navigation Co., Ltd., 191
Osborn Foundry & Engineering Co., Ltd., 110
Osborn, S., & Co., Ltd., 654
Pacific Steam Navigation Co., 46
Palmers (Hebburn) Co., Ltd., 46, 270, 607
Parion Products, Ltd., 454
Parmiter, Hope & Sugden, Ltd., 195
Parsons, C. A., & Co., Ltd., 302, 558
Parsons Marine Steam Turbine Co., Ltd., 174
Partridge Jones & John Paton, Ltd., 782
Peninsular and Oriental Steam Navigation Co., 27
Perkins, F., Ltd., 196
Philips Electrical Ltd., 616
Plessey Co., Ltd., 629
Powell Duffryn, Ltd., 494
Power Jets (Research and Developments), Ltd., 237
Preload (Great Britain), Ltd., 174
Pressed Steel Co., Ltd., 494
Pugh, C. H., Ltd., 78
Quasi-Arc Co., Ltd., 366
Radiovisor Parent, Ltd., 30
Ransome & Marles, Ltd., 494
Ratcliffe (Great Britain), Ltd., 622
Readhead, J., & Sons, Ltd., 174
Reyrolle, A., & Co., Ltd., 78
Road Machines (Drayton), Ltd., 589
Roadless Traction, Ltd., 672
Roe, A. V., Canada, Ltd., 477
Roe, A. V., & Co., Ltd., 34, 79, 825
Rolls-Royce, Ltd., 216
Rotherham Forge & Rolling Co., Ltd., 462
Roto-Finish, Ltd., 175
Rubery Owen & Co., Ltd., 14
Sanderson Bros. & Newbould, 240
Schori Metallising Process, Ltd., 526
Scottish Diatomite, Ltd., 270
Scottish Industrial Estates, Ltd., 14
Scottish and Mercantile Investment Co., Ltd., 654
Scrivener, A., Ltd., 668
Semtex, Ltd., 756
Shay Products, Ltd., 602
Shell D'Arcy Petroleum Co. of Nigeria, Ltd., 700
Shell-Mex and B.P., Ltd., 655
Short Bros. & Harland, Ltd., 822
Silver City Airways, Ltd., 648
Smith's Dock Co., Ltd., 174
South Durham Steel & Iron Co., Ltd., 526
Spillers, Ltd., 750
Stainless Plating Ltd., 430
Standard Motor Co., Ltd., 14, 302, 643, 750, 782
Stanley Tool Works (Great Britain), Ltd., 270
Stanton Iron Works Co., Ltd., 46
Steel Co. of Wales, Ltd., 238, 462, 686
Steel, Peech & Tozer, Ltd., 206, 270
Stewarts and Lloyds, Ltd., 686, 718
Stubbs, P., Ltd., 586
Summers, J., & Co., Ltd., 142
Super Oil Seals and Gaskets, Ltd., 381
Swan, Hunter, & Wigham Richardson, Ltd., 46, 78, 536, 607, 671
Swift, Levick & Sons, Ltd., 622
Symons, H. D., & Co., Ltd., 716
Talbot-Stead Tube Co., Ltd., 686
Tattersalls, Ltd., 526
Telegraph Construction & Maintenance Co., Ltd., 735
Texas Co., 14
Thomas, R., & Baldwins, Ltd., 110, 462, 558, 672, 750, 782
Thompson, J., Ltd., 302
Thompson, J. L., & Sons, Ltd., 142, 430
Thor Power Tool Co., 654
Tinsley Rolling Mills Co., Ltd., 590
Triplex Group, 136, 629, 654
Turner & Newall, Ltd., 169
Ultra Electric, Ltd., 158
United Steel Companies, Ltd., 270, 302, 526, 581, 686
Vauxhall Motors, Ltd., 814
Vickers-Armstrongs Ltd., 613, 671, 750
Victor Products, Ltd., 302
Villiers Engineering Co., Ltd., 78
Weatherhead, W., & Sons, 174, 462
Weir, G. & J., Ltd., 558
Weldall & Assembly, Ltd., 46
Wiggin, H., & Co., Ltd., 298
Wild-Barfield Electric Furnaces, Ltd., 128
Wills, W. D. & H. O., Ltd., 462
Winston Electronics, 380
Woodall-Duckham Construction Co., Ltd., 366
Wolverhampton Aviation, Ltd., 270
Wolverhampton Metal Co., Ltd., 494
Yarrow & Co., Ltd., 686

Concrete. See *Cement and Concrete*

Contracts:

15, 47, 79, 111, 143, 175, 207, 239, 271, 303, 335, 399, 480, 511, 669, 702, 728, 800, 832
Aiton & Co., Ltd., 239
Aluminium Wire & Cable Co., Ltd., 832
Arrol, Sir W., & Co., Ltd., 800
Austin Motor Co., Ltd., 175
Babcock & Wilcox, Ltd., 480, 800
Bagnall, W. G., Ltd., 47
Bewley & Scott, Ltd., 175
Brand, C., & Son, Ltd., 143
Bristol Aeroplane Co., Ltd., 728
British General Electric Co. (Pty.), Ltd., 143
British Insulated Cables (South Africa), Ltd., 511
British Insulated Callender's Cables, Ltd., 47, 207

Contracts—*continued.*

British Insulated Callender's Construction Co., Ltd., 47, 239, 800 (2)
British Straddle Carrier Co., Ltd., 728
British Thomson-Houston Co., Ltd., 79, 239, 480, 800 (3)
Brown, G., & Co. (Marine), Ltd., 239
Brush Bagnall Traction, Ltd., 47
Brush Electrical Engineering Co., Ltd., 47, 271
Brush Group, 335
Caledon Shipbuilding & Engineering Co., Ltd., 511
Canadian Marconi Co., 175
Cementation Co., Ltd., 399
Colville Constructional Co., Ltd., 480
Cowans, Sheldon & Co., Ltd., 702
Croad, J., Ltd., 480
Crompton Parkinson, Ltd., 239, 271
Crossley Bros., Ltd., 15
Davie Shipbuilding Co., Ltd., 111
Davis, E. (Fixers), Ltd., 143, 175 (2)
Davy & United Engineering Co., Ltd., 511
de Havilland Aircraft Co., Ltd., 207, 728
Decca Radar, Ltd., 207, 335
Denny, W., & Bros., Ltd., 239
Distington Engineering Co., Ltd., 702
Dobson & Barlow, Ltd., 143
Dorman, Long & Co., Ltd., 480
Electric & Musical Industries, Ltd., 669, 832
E.M.I. Sales & Service, Ltd., 399
Enfield Cables, Ltd., 175, 800
English Electric Co., Ltd., 15, 47, 175, 239 (2), 480, 800
English Electric Export & Trading Co., Ltd., 399
Eve, J. L., Construction Co., Ltd., 480
Express Lift Co., Ltd., 239, 669
Ferguson Bros. (Port Glasgow), Ltd., 15
Film Cooling Towers (1925), Ltd., 239
Foster Wheeler, Ltd., 47
Fowler, J., & Co. (Leeds), Ltd., 239, 832
Fraser & Chalmers Engineering Works of General Electric Co., Ltd., 143, 303
French, W. & C., Ltd., 143
Fuller Electrical & Manufacturing Co., Ltd., 480
General Electric Co., Ltd., 47 (2), 669, 728, 800
Gerrard, J., & Sons, Ltd., 480
Gilkes, G., & Gordon, Ltd., 669
Glover, W. T., & Co., Ltd., 239, 800
Goole Shipbuilding & Repairing Co., Ltd., 702
Harrison, M., & Co. (Leeds), Ltd., 480
Head, Wrightson & Co., Ltd., 832
Hick, Hargreaves & Co., Ltd., 47 (2)
Holloway Brothers (London), Ltd., 480
Hunting Aerosurveys, Ltd., 239
Hunting Geophysics, Ltd., 669
International Combustion Co., Ltd., 480
Jarvis, J., & Sons, Ltd., 239
Keir, J. L., & Co., Ltd., 47 (2)
Kilpatrick, J., & Son, Ltd., 832
Laing, J., & Sons, Ltd., 239
Lewis, J., & Sons, Ltd., 15
Leyland Motors, Ltd., 239, 303, 335, 399
Lobnitz & Co., Ltd., 15
Lucas Furnaces, Ltd., 111
Marconi's Wireless Telegraph Co., Ltd., 47, 175, 511, 669
Marples, Ridgeway & Partners, Ltd., 832
Materials Handling Equipment (G.B.), Ltd., 728
Melville, Dundas & Whitson, Ltd., 239
Metropolitan-Vickers Electrical Co., Ltd., 47 (3), 207, 271, 480 (2)
Miller, J., & Partners, 669
Mirrlees, Bickerton & Day, Ltd., 47, 271, 702
Mitchell Construction Co., 800 (2)
Mitchell Engineering, Ltd., 239 (2)
Mitchell, F., & Sons, Ltd., 47
Modern Wheel Drive, Ltd., 111
National Gas & Oil Engine Co., Ltd., 47, 207
National Oil Engines (Export), Ltd., 143
North British Locomotive Co., Ltd., 702
Nuttall, E., Sons & Co. (London), Ltd., 669
Palmers Hebburn Co., Ltd., 16, 832
Parsons, C. A., & Co., Ltd., 239 (3), 480, 800
Pilgrim Mobile Units, Ltd., 669
Pirelli-General Cable Works, Ltd., 239
Reyrolle, A., & Co., Ltd., 480 (2), 800
Richardsons, Westgarth & Co., Ltd., 47
Richardsons Westgarth (Hartlepool), Ltd., 47
Robb, H., Ltd., 511
Scott Electric Vehicles, Ltd., 111
Scottish Machine Tool Corporation, Ltd., 832
Siemens & General Electric Railway Signal Co., Ltd., 669
Smith, A. & W., & Co., Ltd., 15
Solus-Schall, Ltd., 702
Steel, Peech & Tozer Branch of United Steel Companies, Ltd., 143
Stephen, A., & Sons, Ltd., 111
Stewarts and Lloyds, Ltd., 239, 728
Stirling Boiler Co., Ltd., 800
Taylor Woodrow Construction Ltd., 111, 480 (2)
Tersons, Ltd., 143
Thompson Water Tube Boilers, Ltd., 239
Vickers-Armstrongs Ltd., 15, 47, 207, 480, 728
Watkinson, F. & J., 143
Weir, G. & J., Ltd., 800
Wellerman Brothers, Ltd., 143
Westinghouse Brake & Signal Co., Ltd., 207
Yarrow & Co., Ltd., 303

Cranes and Conveyors:

Chain Hoists (Trade Publication), 243
Cranes and Auxiliary Equipment (Trade Publication), 159
Cranes, Overhead (Trade Publication), 384
Hoists (Trade Publication), 525
Material-Handling Equipment (Trade Publication), 797
Mechanical-Handling Equipment (Trade Publications), 213, 511
Mobile Cranes (Trade Publication), 128
Pulley Blocks (Trade Publication), 213
Switches for Belt Conveyors (Trade Publication), 480

Education:

Apprentices Advisory Scheme, 760
Apprentices to Aircraft Engineering, 825
Apprentices at Fraser & Chalmers' Works, 771
Apprentices, Parents' Day for, 110
Apprentices for Wagon Works, 14
Apprenticeship, Courses Prior to, 238
Atomic Power Study at Birmingham University, 686
Bayliss Prize, Award of, 771
Birmingham College of Technology, Report on, 270
Birmingham Technical Colleges, New Branches for, 302
Birmingham University, Appeal for Funds, 718
Cambridge University, Presentation to, 532
Chemical Industry, Training for, 334
City and Guilds of London Institute, Fellowships, 252; Progress of, 271
Competitions, Inventions, 235; Craftsmanship and Draughtsmanship, 239; W. E. Highfield, 250
Conferences, Civil Engineering in Colonies, 87; Prestressed Concrete, Canadian, 102; North Sea Floods, 127; European Television, 151; Anglo-American Aeronautical, 234; Industrial Staff Photographers, 360; Commonwealth, on Aeronautical Research, 428; Aircraft Production, 550; Steel Managers, 622
Congresses, Royal Sanitary Institute, 169; International Engineers', 198; World Petroleum, 831
Coopers Hill War Memorial Prize and Medal, 141
Course, Graduate, in Technical Subjects, 159
Courses, Steel Executives, 110; Industrial Executives, 142; Electronics, 198; Higher Technology, 217, 366; Before Apprenticeship, 238; Work Simplification, 271; Photoelasticity, 299; Electric-Arc, 301; Iron and Steel Making, 302; Northampton Polytechnic, 320; Works and Plant Engineers, 340; Welding, 366, 558; Electrical Engineering 428; Power-System Plant, 494; Soil Mechanics, 686; Electrical Units, 686; Science, 814
Crewe Pupils and Premium Apprentices, Dinner for, 235
Engineering Design, Teaching of, 372
Engineering Education in Manchester, 238
Esk Valley College, Opening of, 494
Examinations, Water and Drainage Inspectors, 119; Agricultural Engineering, 271; Radio-Servicing Certificate, 301; Institute of Marine Engineers, 418
Fellowship on Biosynthesis, 182
Forest Training School at Pitlochry, 302
Glasgow University, Extensions to, 590
Horology, National College of, Prospectus, 160
Indian Institute of Technology, Opening of, 60
Industrial Administration, Professorship of, 782
Inter-Factory Visits, 302
Inventions Competition, Association of Supervising Electrical Engineers, 235
Iron and Steel Industry, Information Course for, 430
Junior Management, Philosophy for, 136
King's College, Newcastle, Appeal of, 558
Lectures on Gas Turbines, 237; Christmas, 798, 800, 828; Juvenile, 830
Lehigh University, Universal Testing Machine at, 444
London Evening Classes, Guide to, 265
Management, Training in, 302
Managerial Posts, Training for, 750
Middlesex, Further Education in, 287
National Foundry Craft Training Centre, 718
Nigerians, Visit to Manchester, 494
Northampton Polytechnic, Courses at, 320
Nottingham University, Endowment for, 814
Part-Time Day Releases for Education, 782
Public Schoolboys, Interest in Industry, 398
Regional Advisory Councils for Further Education, 459
Royal Society of Arts, Prizes of, 797
Scholarships, Aeronautical Research, 201
Science, Post-Graduate Courses on, 814
Sheffield, New College of Technology at, 398
Sheffield University, Appeal for, 814
Sheffield University, Associateship in Metallurgy, 750
Sheffield University, Re-Equipment of Mining Department, 366
Shipyard Apprentices, Prizes for, 183
Stornoway, New College at, 462
Summer Schools, Productivity Methods, 121; Foremen, 156; Cost Accountancy, 278
Technical College, Smethwick, Extensions to, 14
Technical Writing, Symposium on, 439
Technical Writing on Wireless, 546
Toolmaking as a Career, 102
Training for Management, 302
Training, Practical, for University Students, 556
Training Young Men for Managerial Posts, 750
West Hartlepool Technical College, Report of, 334
Wolverhampton and Staffordshire Technical College, Prospectus, 317
Work Study in Industry, 462
Works Visits for Students, 128

Electricity:

Amplitude Measuring Set (Trade Publication), 480
Barony Power Station, 14, 32
Battery-Charging Control Unit (Trade Publication), 96
Belfast, Supply in, 143
Breakdown Repair, Urgent Call for, 78
Broadcasting Transmitting Station in Wales, 27

Electricity—*continued.*

Cables, Electric, for Aircraft, 629
Cable Factory, Visit of Minister to, 558
Cables, Light-Weight, Telephone and Signalling (Trade Publication), 31
Cable, Polythene-Insulated, at Manchester, 735
Cables, Power, Aluminium (Trade Publication), 525
Cables, Sealing Sleeves for, 416
Canadian and American Electric Power Systems, Connection of, 692
Carmarthen Bay Power Station, 46
Cathode-Ray Tubes (Trade Publications), 128, 159
Charges for Electricity, 494
Circuit-Breakers (Trade Publication), 670
Circuit-Breakers, Oil, Outdoor (Trade Publication), 320
Contactor-Starter, Direct-on-Line, 141
Crystal Palace Television Station, 605
Cuan Sound, Transmission Line Over, 590
Definitions of Electrical Power Terms, 447
Doncaster, Power Station at, 462
Dunfermline Power Station, Extensions to, 423
Dust Precipitation, Electro-Static (Trade Publication), 320
Electric Arc, Extension Course on, 301
Electric Hand Tools, 735
Electric Motor and Control Gear Manufacture, 724
Energy Regulators (Trade Publication), 831
Farms, Electricity in, 14
Fluorescent Lamp Fittings, 254
General Electric Co., Ltd., History of, 813
Generation Statistics, 27, 151, 352, 429, 706, 822
Generators, Alternating-Current (Trade Publication), 670
Germanium Diodes, Developments in, 212
Giant Power Booklet, 614
Girvan Electricity Substation, 14
Grid, Electricity, New, 159
Grit Nuisance from Power Stations, 78
Highland Railway Lines, Electrification of, 814
Hydro-Electric Developments in Scotland, 740
Immersion Heater, 237
Inspection Projector (Trade Publication), 545
Inspection Room for Brooks Motors Ltd., 435
Junction Boxes for Underfloor Systems, 96
Lamps, Bulbs and Tubes (Trade Publications), 670, 831
Lamp, Mercury-Discharge, without Colour Distortion, 331
Lighting, Dual, in Brass Foundry, 621
Lighting Equipment (Trade Publications), 159, 320, 512
Lighting, Interior, Automatic Control of, 30
Lighting, Street, Fluorescent, at Liverpool, 447
Lime Grove Television Studios, 301
Lincoln Power Station, Extension to, 822
Load Spreading in Midlands, 590
London - Southend - Chelmsford Railway, Electrification of, 550
Magnetic Materials (Trade Publication), 320
Mecca, Electricity Supply in, 670
Mexborough Power Station, Extensions to, 822
Microphones (Trade Publication), 286
Mine Rescue Work, Radio for, 782
Motors, Electric (Trade Publication), 704
Motors, Electric, Care of (Trade Publication), 670
Motors, Flameproof (Trade Publication), 480
Motors with High-Inertia Loads, Protection of, 828
Mounting Plates for Switches (Trade Publication), 31
Mouswald Radio Transmitter, 814
New Zealand, Electricity Supply in, 616
New Zealand, Hydro-Electric Development in, 384
Nigeria, Radio Communication in, 93
North East, Electricity Supply in, 270
Oven, Electric, for Heat Treatment, 676
Overhead Electrical Equipment for Mines (Trade Publication), 31
Penrith, Electricity Substations for, 430
Photo-Electric Level-Controlling Apparatus (Trade Publication), 159
Power-Factor Correction Regulator (Trade Publication), 96
Power Factor Meter, 70
Power Line from Hams Hall, Inquiry into Objections Against, 686
Power Plants, Corrosion in (Trade Publication), 480
Power Terms, Electrical, Definitions of, 447
Plugs and Switches, Domestic (Trade Publication), 608
Psychromatics, Study of, 573
Radar for Cargo Vessels (Trade Publication), 159
Radio Control of Public Service Vehicles, 814
Radio-Controlled Fuelling Vehicles, 655
Radio-Servicing Certificate, 301
Radio Telephones for Locomotive Crews, 814
Rectifiers (Trade Publication), 670
Relay for Aerial Circuits, 149
Relays for Remote-Control Systems (Trade Publication), 159
Rural Electricity Arrangements in Midlands, 398
Rural Electricity Undertakings, Finance for, 430, 622
Rural Electrification, International, 825
Rye House Power Station, Extensions to, 437
Scottish Electricity Generation in Winter, 398
Siemens, Sir W., Letters to, 730
Signalling System for Mines (Trade Publication), 64
Singapore, Power Station at, *Erratum*, 384
Sleeves for Cables and Conduits, 416, 428
Sodium Street Lighting in Greenock, 206
Soldering Iron, Electric (Trade Publication), 128
South Wales, Generation in, 270

Electricity—*continued.*

Spark-Control Unit (Trade Publication), 608
Stator, Long Railway Journey of, 558
Steelworks, Electrical Equipment for (Trade Publication), 480
Switches for Belt Conveyors (Trade Publication), 480
Switches, Mounting Plates for (Trade Publication), 31
Switch, 660-Volt Limit, 233
Telegraph Distortion, Measuring Set for (Trade Publication), 320
Telegraph System, Amplitude-Modulated Voice-Frequency (Trade Publication), 64
Telemetering Systems (Trade Publications), 128, 159
Telephone, Loud-Speaking, 380
Television Cameras, Optical System for, 13
Television Conference, European, 151
Television Station at Crystal Palace, 605
Television Station at Dartmoor, 238
Television Station at Sutton Coldfield, 206
Television Studios at Lime Grove, 301
Tiree, Electricity for, 430
Transformers for Canada, 221
Transmission Line, Abergavenny-Brecon, 14
Transmitter, Third-Programme, at Daventry, 384
Transmitting Station, Broadcast, 828
Valves, Receiving and Industrial (Trade Publications), 128, 159
Voltage Regulating Equipment (Trade Publication), 525
Wakefield Power Station, 79
Waste Coal, Power Station to Use, 32
Weaving, Electricity in (Trade Publication), 797
Willington Power Station, 575
Wireless, Premiums for Articles on, 546
Wool Industry, Electric Plant for (Trade Publication), 640
Works Radio System, 206
Works Traffic Control by Radio, 334
X-Ray Diffraction Equipment, 616
X-Ray Fluoroscopy (Trade Publication), 797
X-Ray Testing Service (Trade Publication), 320
Yarmouth, Power Station at, 237
Yorkshire, Electricity Supply in, 302

Engines and Boilers:

Accumulators, Steam (Trade Publication), 545
Central Heating Boilers, Efficient Operation of, 347
Closed-Feed System for Boilers (Trade Publication), 768
Process Steam, Power from (Trade Publication), 797
Steam Generators, Construction Engineering for (Trade Publication), 320
Stokers, Mechanical (Trade Publication), 512
Stokers, Travelling-Grate (Trade Publication), 159
Turbine Gears (Trade Publication), 286
Turbines, Historic, for Glasgow Museum, 174
Turbine Research Station, Open Days at, 430
Turbo-Alternator Construction in Northern Ireland, 730
Water-Tube Boilers (Trade Publication), 320

Errata and Addenda:

Blast-Furnace Slag Cement Plant, 640
Cathodic Protection of Buried or Submerged Structures, 299
Development for the Wright Flyer, 791
Diesel Electric Locomotive for New South Wales, 212
Economic Nuclear Power, 375
Engineering Industries of Sheffield, 240
Fifty Years of Economics, 522
Gear Shaving, 235
Oil Engines for Automobiles, 519
Plunger Pressure Gauge, 736
Power Station at Singapore, 384
Press, 50-ton, 361
Training for Production, 813
Tramway Car at Leeds, 199
Ultrasonic Detector for Flaws in Rails, 412

Exhibitions:

Aeronautical Jubilee, 756
Architecture and Building, in Australia, 350
"Ardoloy" Tooling, 270
British Industries Fair, 124, 347, 686
British Radio Components, Sweden, 175
Business Efficiency, 195
Clock and Watch, Birmingham, 605
Cycle and Motor-Cycle Show, 798
Electrical Engineers, 1954, 34, 285
Engineering Model, 622
Factory Equipment, 218
Flying Display and Exhibition, 271
Harwell Atomic Techniques, 686
Liége International Fair, 218
London on Wheels, 298
Low-Cost Housing, 190
Machine Tools in Operation, 493
Map, 62
Model Engine, 398
National Packaging, 1955, 797
Platinum Metals, 269, 461
Printing Machinery and Allied Trades, 175
Road Safety, 471
Royal Rail Cars, 270
Scottish Industries, 234
Scottish Motor Show, 558
Silicone Rubber, 640, 716
Television, 685
Vienna Spring Trade Fair, 175
Welsh Industries Fair, 171, 270, 366
Works, 686

Explosions. See *Accidents*

Explosives. See *Guns and Explosives*

Gas and Gasworks:

Alnwick Gasworks, Extensions to, 110
Calor Gas for Stroma Island, 494
East Midlands, Gas Supplies in, 78
Gas Grids in Wales, 142
Gas-Heated Plant, Ancillary Equipment for, 475
Gas Prices in Midlands, 814
Gas Producers, Developments in, 821
Industrial Gases (Trade Publication), 159
Lighting Equipment (Trade Publication), 159
Methane from Collieries, Household Use of, 334
Natural Gas Exploration in Yorkshire, 718
Natural Gas Production in North Wales, 590
Northern Gas Board, Work of, 590
Residual Oil, Gas from, 782
Shotts Gasworks, Closure of, 302
Water-Gas Plant for Sunderland, 143
West Bromwich Gasworks, Extensions to, 526

Gas and Oil Engines:

Aero Engine, Coventry Victor Lightweight, 334
Automobiles, Oil Engine for, *Erratum*, 519
"Avon" Jet Engines (Trade Publication), 128
Boat Engine, Improved, 78
British Polar Engines, Nine-Cylinder, 366
Canadian Jet-Engine Factory, 477
Diesel Engines for Industrial Use (Trade Publication), 416
Diesel Engines for Oil-Well Drilling (Trade Publication), 640
Doxford Engine, Large, 142
Gas Engine, Supercharged, 373
Gas Turbines, Lectures on, 237
Gas Turbines for Sewage Power Station, 777
Motor Car, Diesel-Engined, 643
Motor Cars, Gas Turbines for, 686
Napier Deltic Engines, 567
Taxicabs with Diesel Engines, 196

Guns and Explosives:

Guided Weapons Department, Ministry of Supply, Reorganisation at, 829
New Explosives Depot, 600

Harbours, Docks and Piers:

Armadale Pier, Reconstruction of, 814
Cardiff Docks, Approaches to, 142
Cardiff, Proposed Dry Dock at, 174
Carradale, Harbour at, 526
Cement Work for Harbours (Trade Publication), 286
Gardenstown, Harbour at, 782
Glasgow Harbour, Improvement Scheme for, 78
Graving Dock for the Clyde, 142
Greenock, Graving Dock at, 686
Hartlepool Old Harbour, Reconstruction at, 14
Kyle of Lochalsh, Fishery Pier at, 110
Leith Docks, Improvements at, 110
Leith, Port of, Handbook on, 238
Lynmouth Harbour, Improvements at, 95
Regent's Canal Dock, Gates for, 302
Rothesay Pier, Extension to, 750
South Shields, Dry Docks at, 174, 302
Stroma Island, Harbour at, 494
Swansea Docks, Improvements to, 142
Tarbert Pier, Improvements to, 622

Industries and Commerce:

Admiralty Contracts for Wales, 366
Aircraft Exports, British, 205
Argentina, Trade with, 398
Australia, Difficulties of Exports to, 302
Australian Import Quotas, 14
Australians, Visit to Rugby Works, 557
Ball-Bearings Factory at Greencroft, 494
Brick-Making Industry in Wales, 622
Bridgend Furniture Factories, Closure of, 334
Bristol Channel, Overseas Trade of, 174
Bulith Wells, Industrial Activity in, 14
Canada, Export Order for, 782
Canada, Scottish Trade with, 142
Canadian Factory for Midland Firm, 622
Canteens, Unprofitable, 590
Cardiff, Developments at, 398
Cardiff, Industrial Sites in, 622
Census of Production, 1950, 477, 532, 686
Commercial and Industrial Information Service, 644
Company Shares for Employees, 750
Competition, Development of, 654
Conditions of Sale of Tools, 286
Cumberland, Industrial Development of, 206
Cutlery, Imported, Restrictions on, 334
Cycle Trade, British, 288
Defence Programme Orders for Wales, 334
Diatomite Industry in Skye, 270
Dollar Aid for Research Publications, 124
East Scotland, Industrial Development of, 686
Engineering Industries of Sheffield, 240
Exports, Coal and Coke, 750
Factory, Canadian Jet-Engine, 477
Factory for de Havilland Propellers, Ltd., 631
Factory for Dowty Equipment of Canada Ltd., 489
Factory Equipment Exhibition, 218
Factory Extension for International Harvester Co., Ltd., 174
Factory Extensions on Tees-Side, 334
Factory Health Centre, Construction of, 14
Factories for Letting, 590
Factory for Light Engineering Parts, 14
Factory, Machine-Tool, Transfer of, 782
Factory for Making Insulating Material, 622
Factory Removal to East Kilbride, 238
Factory, Spring, at West Bromwich, 14
Fair Copying Agreement, 199
Ferguson Tractors, Exports of, 14

Industries and Commerce—*continued.*

Ferodo Brake Lining, Manufacture in Brazil, 169
Finance for Exports (Trade Publication), 608
German Competition for Tools, 526
German Productivity Team, Visit to Sheffield, 581
Highlands, Industrial Development of, 206
Industrial Injuries Act, 237
Industrial Population, Movement in Midlands, 46
Information Course for Iron and Stee Industry, 430
Junior Management, Philosophy for, 136
Long-Service Awards, 686, 814
Magnesium, Private Trading in, 469
Molybdenum, Removal of Restrictions on, 475
Motor Vehicles, Production of, 318, 685
Newcastle, Industrial Sites in, 622
North East Engineering Bureau, 149
North East, Industrial Developments in, 494, 654
North East, Publicity Committee for, 46
Occupational Disabilities, Compensation for, 102
Personal Contact in Overseas Trade, 586
Pewter, Orders for, 14
Prices, Calculator for, 454
Prices of Coal, Effect on Wages, 686
Prices of Coal, New Scheme for, 398
Prices of Gas in Midlands, 814
Price of Steel Products, 174
Prices of Tinplate, 192, 454
Prices of Tungsten Ores, 692
Productivity Committee in Edinburgh, 46
Productivity Councils in Wales, 558
Productivity Drives in Wales, 110
Productivity for Glasgow, 78
Productivity in Industry, 398, 750, 782
Productivity in Industry, Films on, 317
Productivity Methods, Summer School on, 121
Public Schoolboys for Industry, 398
Rehabilitation of Rural Wales, 110
Seaham, Industrial Scheme for, 174
Seaweed Collection in Deep Water, 366
Sheffield, Industrial Development of, 174
Sheffield, Lighter Industries in, 718
Sheffield Works, Civic Week at, 430
Sheffield Works, Extensions to, 430
Shuttles for Jute Industry, 78
Small Manufacturers, Exports by, 750
South Africa, Trade with, 622
South Wales Ports, Trade of, 46, 462, 814
Steel Tubes, Orders for, 686
Tobacco Factory at Glasgow, 462
Trade Mission to North America, 512
Tyneside, Industrial Developments of, 558
Wales, Projected New Industries for, 302
Welsh Industrial Productivity, Improvement to, 462, 494
West Cumberland, Industrial Development in, 206
Work Study, Use in Industry, 462

Institutions. See *Technical Societies*

Internal-Combustion Engines. See *Gas and Oil Engines*

Iron and Steel:

Angle-Plates (Trade Publication), 797
Austria, Steel Plates from, 334
Castings, Large, for Export to United States, 142
Consett Ironworks, Ore Imports to, 750
Course for Boys on Iron and Steel Making, 302
Ebbw Vale, Steel Output at, 110, 782
Electrode Comparator for Mild Steel, 5
Film, Malleable-Iron Foundry, 169
Floor Panels, Steel (Trade Publication), 286
Fluorine Poisoning Due to Proximity of Iron Works, 46
Foundry Training Committee, to be Wound up, 590
Germany, Steel Plates from, 366
Hammer Forge at Ickles Works, 520
Iron Foundry, Rebuilding of, 270
Lackenby Steelworks, Construction of, 366, 453, 782
Managers, Steel, Conference of, 622
National Foundry Craft Training Centre, 718
Newmains Foundry, Closure of, 558
Pipes, Spun-Iron, Manufacture of, 46
Pipes, Steel, for Alaska, 718
Pressure Vessels, Steel (Trade Publication), 175
Private Ownership of Steelworks, 174
Production in Sheffield, 238, 270, 366
Production in United Kingdom, 127, 286, 391
Record Output of Steel, 750
Rolling Mill at Bilston, Sale of, 654
Rolling-Mill Equipment, Contract for, 462
Rolling Mills, Modernisation of, 590
Rolling Mill, New, at Sheffield, 622
Rolling-Mill Plant, Output of, 558, 622
Scotland, Iron and Steel Production in, 526, 654, 814
Scrap, Iron and Steel, Need for, 398
Shears, Hot Bloom and Slab (Trade Publication), 175
Shipbuilders, Steel Supplies for, 827
Shipbuilding Industry, Steel Plate for, 252
Shortage of Steel, Complaints about, 270
Smoke from Steelworks, 206
South Durham Steelworks, Extensions to, 526
Stainless Steel Handbook (Trade Publication), 213
Steel Company of Wales, Ltd., High Production of, 686
Steel Executives, Courses for, 110
Steel Industry, Statistics of, 494
Steel-Melting Practice, Developments in, 462
Steel-Melting Plant, Excavations for, 142
Steel Mill, Closure of, 142

Iron and Steel—*continued.*

Steel and Pig Iron Production, 771
Steel Plate, Fabrications in (Trade Publication), 831
Steel Products, Price of, 174
Steel Products, Welsh, Export of, 494
Steelworks, Electrical Equipment for (Trade Publication), 480
Tubes, Steel, Orders for, 686

Labour Questions. See *Trade Societies, etc.*

Lighting. See *Electricity* and *Gas*

Literature. See LITERATURE INDEX

Locomotives. See *Railways and Locomotives*

Machine and Other Tools:

"Ardoloy" Tooling, Demonstrations of, 270
Barrel-Finishing Machine, 175
Boring and Turning Machine, Vertical, 366
Drilling Heads (Trade Publication), 384
Exhibition of Machine Tools, 493
Factory, Machine-Tool, Transfer of, 782
Gear-Cutting Machines (Trade Publication), 525
German Competition for Tool Supplies, 526
Gluing, Edge, Machine for, 73
Grinding Brake-Shoes, Machine for, 668
Grinding-Wheel Dressing Tool, 557
Guillotines for Slate and Asbestos (Trade Publication), 416
Hand Tools, Electric, 735
Lathes, V.D.L. Type (Trade Publication), 213
Machine Tools (Trade Publication), 831
Micrometers, Manufacture of, 110
Noble and Lund, Ltd., Extensions to Machine Shops of, 174
Pillar Drill (Trade Publication), 320
Saw Bench for Timber (Trade Publication), 545
Shaping Machine (Trade Publication), 831
Shears for High-Tensile Wire (Trade Publication), 511
Small Components, Finishing of, 175
Testing Machine, Universal, 444
Threading Machines (Trade Publication), 286
Toolmaking as a Career, 102
Tools, Conditions of Sale for, 286
Veneering Machinery (Trade Publication), 608
Vice, Machine-Tool (Trade Publication), 831
Woodworking Machines (Trade Publications), 511, 608

Marine Engineering. See *Engines and Boilers;* and *Ships and Shipbuilding*

Mining and Metallurgy:

Aluminium Alloys (Trade Publication), 213
Aluminium Alloys, Heat Treatment of, 279
Aluminium-Alloy Scaffolding (Trade Publication), 213
Aluminium-Alloy Sheet Products (Trade Publication), 175
Aluminium Alloys, Wrought (Trade Publication), 175
Aluminium Development Association, List of Members, 271
Aluminium Facing Panels for Skyscraper, 383
Aluminium Production (Trade Publication), 797
Aluminium Sheet, Embossed, 265
Aluminium-Wire Factory, Swansea, 526
Asbestos, Guillotines for (Trade Publication), 416
Asbestos Sheet with Metallic Insertion (Trade Publication), 96
Boring in Residential District, 78
Brass Foundry, Dual Lighting in, 621
Brass Pressings (Trade Publication), 213
Brazing Alloys (Trade Publication), 175
Copper Alloy, Creep and Scale-Resistant (Trade Publication), 175
Copper Pressings (Trade Publication), 213
Corrosion in Power Plants (Trade Publication), 480
Corrosion, Underground, Meter for, 760
Dust in Mines, Research on, 526
Electrical Equipment, Overhead, for Mines (Trade Publication), 31
Electro-Plating Equipment (Trade Publication), 525
Facing Alloys (Trade Publication), 175
Furnaces, Blast, at Margam, 110
Furnaces, Blast, at Redcar, 526
Furnaces, Electric (Trade Publication), 768
Furnace, Electric-Arc, at Sheffield, 110
Furnaces, Electric Heat-Treatment (Trade Publication), 175
Graphite Deposits Found in Inverness-shire, 366
Heat Treatment, Electric Oven for, 676
Light Alloys for Structural Work (Trade Publication), 159
Magnesium, Private Trading in, 469
Malvern, Quarrying at, 494
Manganese Ore, Imports from Russia, 750
Metal-Working Machinery (Trade Publication), 175
Metallurgy, Associateship in, Sheffield University, 750
Molybdenum, Removal of Restrictions on, 475
Nickel Ore, Large Crushers for, 190
Nickel Trading, Freeing of, 654
Nimonic 75 Alloy, 298
Ore Cargo, Arrival on the Tyne, 718
Ore Imports to Consett Ironworks, 750
Ore Quay at Newcastle, 494
Over-Age Miners, Employment of, 206
Petroleum, Prospecting for, 494
Pits, Sinking by German Firms, 14

Mining and Metallurgy—*continued.*

Platinum Metals Exhibition, 269, 461
Plumbago Crucibles (Trade Publication), 175
Potash Developments at Whitby, 110
Pyrites Cinders, Transfer to Middlesbrough, 558
Quarry Outputs, Raising of, 430
Research Workshop for Coal-Mining Industry, 216
Safety Gates in Pit Shafts, 173
Sheet Alloy Material for High-Temperature Uses, 298
Signalling System for Mines (Trade Publications), 64, 159
Slate, Guillotines for (Trade Publication), 416
Suspenders, Insulated Cathode (Trade Publication), 670
Tin-Plate and Hot-Strip Mills, Outputs of, 558
Tin-Plate Industry, Improvement of, 462
Tin-Plate Industry, Labour Situation in, 622
Tin Plate, Prices of, 192, 454
Tin-Plate Production in United States, 92
Tin-Plate Works, Closure of, 78
Tin-Plate Works, Old Type, Re-opening of, 238
Tungsten Ore, Cheapening of, 654
Tungsten Ores, Prices of, 692
Uranium Deposits, 192
Volta River Bauxite Project, 455
Wolverhampton Metal Co., Ltd., Jubilee of, 494

Miscellaneous:

Abrasives Manufacture in Belfast, 13
Adhesives, Bakelite (Trade Publication), 213
Adhesives for Lagging, 425
Air Compressed, Equipment, for Farms (Trade Publication), 480
Air Compressors (Trade Publications), 159, 768
Air Heaters (Trade Publication), 159
Air Pollution in Sheffield, 494
Anemometer, Wind-Velocity Signal, 160
Bakelite Adhesives (Trade Publication), 213
Ball Bearings, Manufacture in Italy, 203
Birmingham Museum, Engineering Hall at, 46
British Plastics Federation Information Service, 668
Calculator for Prices, 454
Ceramic Ware (Trade Publication), 175
Chuck and Coupling, Automatic (Trade Publication), 175
Cinematograph Group, Formation of, 303
Cleanser for Dirty Hands (Trade Publication), 831
Cobb Memorial at Loch Ness, 352
"Colcrete" Concrete (Trade Publication), 286
"Colgrout" Concrete (Trade Publication), 286
Control Equipment, Automatic (Trade Publication), 511
Controller, Recording (Trade Publication), 704
Couplings for Conduits, 428
Couplings for Oil Refinery, 716
Couplings, Shaft (Trade Publication), 320
Crompton, Samuel, Commemoration of, 814
De-Superheating Equipment (Trade Publication), 128
Detergents, Investigation of, 119
Detergents, Synthetic (Trade Publication), 286
Diagrams, Mosaic, for Control Boards (Trade Publication), 416
Diaries, 678, 768
Doors, Flexible (Trade Publication), 511
Dust-Collecting Apparatus (Trade Publication), 768
Dust, Nuisances Caused by, 110, 206, 238, 270, 334, 526
Emulsion-Type Degreasing Agent, 271
Enfield Review, First Issue of, 756
Engraving Machines (Trade Publication), 31
Fans, Centrifugal (Trade Publication), 64
Fans, Marine, Aerofoil (Trade Publication), 480
Fan, Window, Draught-Proof, 333
Ferodo Brake Linings, 160
Film, Air-Sea Rescue, 158
Films, Building Research Station, 439
Film, Malleable-Iron Foundry, 160
Films on Productivity in Industry, 317
Film on Road Making Machines, 586
Film on Shipbuilding, 46
Filmstrips on Prestressed Concrete, 459
Filter Cloths (Trade Publication), 480
Fish-Meal and Oil Plant (Trade Publication), 525
Fish Processing, Machinery for, 654
Fuel Efficiency Services in Scotland, 238
Fuel, Notes for Speakers on, 589
Fuel Outlook in Sheffield, 430
Gears, British, in American River Bank, 638
Gear Shaving, *Errata*, 235
Gear Shaving Machines (Trade Publication), 213
Gears, Worm-Reduction (Trade Publication), 608
Gear, Worm, Reduction Units (Trade Publication), 320
Glass with Electrically-Conducting Film, 629
Glass, Gilded, Production of, 654
Glass Works, Reorganisation of, 526
Government Offices, Merger of, 750
Grain Driers (Trade Publication), 159
Grease-Gun Filler (Trade Publication), 96
Grinding Machinery (Trade Publication), 159
"Gunite" Concrete (Trade Publication), 286
Hand Cleanser (Trade Publication), 831
Horological Mechanisms (Trade Publication), 525
Hose, Flexible, Fittings for, 381

Miscellaneous—*continued.*

Indexers, Specialist, 76
Jute Bags, Action of Sea Water on, 398
"Kynal" Aluminium Alloys (Trade Publication), 175
Ladders and Steps (Trade Publication), 159
Lagging, Adhesives for, 425
Lantern, Viewing, X-Ray, 830
Liebert, H., Relics of, 206
Liquid-Fuel Pumping Equipment (Trade Publication), 286
London Transport Executive, Inquiry into Affairs of, 108
Lubricants, Molybdenum Disulphide (Trade Publication), 831
Lubricants for Textile Machinery (Trade Publication), 831
Mechanised Welding News, 600
Memorial Service to Sir Johnstone Wright, 213
"Motogear" Gear-Reduction Units (Trade Publication), 31
Museum of Applied Arts and Sciences, Sydney, 288
Newcomen Anniversary Celebration, 174
Nuts, Self-Locking (Trade Publication), 797
Nylon Driving Belts, 314
Oil Filtration in Modern Engineering, 360
Oil, Lubricating (Trade Publication), 31
Oil-Mill Machinery (Trade Publication), 31
Oil Prospecting in Nigeria, 700
Oil Prospecting in Nottinghamshire, 99
Oil Refinery, Bombay, 224
Oil Refinery, Couplings for, 716
Oil, Residual, Gas from, 782
Oil Survey, Use of Helicopters in, 682
Oily-Water Separators (Trade Publication), 213
Packaging Equipment (Trade Publication), 410
Paint-Spraying Equipment (Trade Publication), 831
Petroleum in Iraq (Trade Publication), 797
Petroleum Plant Manufacture in Midlands, 622
Photography, High-Speed (Trade Publication), 704
Pipes, Copper, Fittings for (Trade Publication), 831
Pipes, Oil, Plastic (Trade Publication), 128
Pipe Unions, Socket-Welded, 602
Pipes, Welded, Fittings for (Trade Publication), 525
Pitch Pine (Trade Publication), 608
Plastic Pumps and Valves (Trade Publication), 286
Plastic Sheeting, 148
Plastics (Trade Publications), 64, 128, 511, 797
Pneumatic Equipment (Trade Publication), 797
Polyester Reinforced Plastic (Trade Publication), 213
Pressure-Reduction Equipment (Trade Publication), 128
Printing Machine, Ticket (Trade Publication), 704
Protective Clothing (Trade Publication), 31
Pump, General-Purpose (Trade Publication), 608
Pumps, Plastic (Trade Publication), 286
Pumps, Portable Self-Priming (Trade Publication), 96
Pumps, Vacuum (Trade Publication), 831
Putty, Bouncing, 143
"Radicon" Worm Reduction Gears (Trade Publication), 608
Recorders, Graphical (Trade Publication), 608, 831
Recorder for Machine Operations (Trade Publication), 768
R.E.M.E. Officers' Dinner, 247
Review on A.S.T.M. Research, 475
Ropes, Locked-Coil (Trade Publication), 511
Scaffolding, Aluminium-Alloy (Trade Publication), 213
Seals, Oil (Trade Publication), 670
Sealing Rings, Synthetic-Rubber (Trade Publication), 608
Sealing Sleeves for Cables, 416
Shops, Electric Vehicles Fitted as (Trade Publication), 31
Shredders, Swing-Hammer (Trade Publication), 831
Shuttles for Jute Industry, 78
Smoke Abatement Booklets, 663
Smokeless Zones in Scotland, 782
Soldering Iron, Electric (Trade Publication), 128
Specialised Information, Directory of Sources of, 149
"Speedivac" Rotary Pumps (Trade Publication), 286
Springs, Leaf, Design of (Trade Publication), 416
Still, Large, for New Refinery, 46
Sweepers, Electric (Trade Publication), 213
Technical Books (Trade Publication), 670
Thermometers, Dial (Trade Publication), 608
Timber, Moisture Contents of, 5
Time Recorders (Trade Publications), 175, 213, 286
Traffic Problems, 523
Transportation of Large Pipes, 526
Tray, Storage, for Benches (Trade Publication), 670
Tube Expanders (Trade Publication), 416
Tubes and Hoses, Flexible (Trade Publication), 545
Universal Testing Machine, Large, 444
V-Belts (Trade Publication), 128
Vacuum Coating Plants (Trade Publication), 286
Valves, Control, Automatic (Trade Publication), 384
Valve Cotters, Removal of (Trade Publication), 545
Valves, Hot-Water (Trade Publication), 64
Valves, Plastic (Trade Publication), 286
Valve Regulator (Trade Publication), 175
Variable-Speed Units (Trade Publication), 384

Miscellaneous—*continued.*

Ventilating Plant (Trade Publication), 128
Ventilation, Operating Gear for, 396
War Memorial, Metropolitan-Vickers Electrical Co., Ltd., 78
Washers, Lock, Safety (Trade Publication), 831
Waste Materials, Disposal of, 558
Water, Oily, Separators for (Trade Publication), 213
Welding, Courses on, 366, 558
Welding, Use in Shipbuilding, 14
Welding Terms, Dictionary of, 669
Windows, Operating Gear for, 396
"Wizard" Pressure Controllers (Trade Publication), 175
Wood and Its Relation to Fire, Bibliography on, 455
Works Gateway, Historic, 586
Works Servicing Tackle, 59
X-Ray Films, Screens and Chemicals (Trade Publication), 512
X-Ray Viewing Lantern, 830

Motor Cars, Etc.:

Austin Motor Co., Ltd., Exports of, 302
Austin Motor Vehicle, Two-Millionth, 750
Autobahnen, German, Extensions to, 361
Commercial Vehicles (Trade Publication), 831
Commercial Vehicles, Bodywork for, 827
Daimler Motor Works, Rebuilding of, 174
Diesel-Engined Motor Car, 643
Fuelling Vehicles at London Airport, Radio-Controlled, 655
Gas Turbines for Motor Cars, 686
Gear Reduction Motor Units (Trade Publication), 31
Gearboxes for Commercial Vehicles (Trade Publication), 640
Girdles for Tractor Wheels, 672
Guy Motor Car of 1919, Search for, 46
Motor-Car Works, Full Time at, 750
Motor Industry, Employment in, 174
Motor-Vehicle Production, 318, 685
Oil Engine for Automobiles, *Erratum*, 519
Omnibus Building in Midlands, 558
Omnibus, New Design, for Birmingham, 142, 494
Omnibus, New Type, for Sheffield, 462
Parking Meters, 654
Public-Service Vehicles, Radio Control of, 814
Road Vehicles, Effect of Gradient on Fuel Consumption of, 44
Shops, Electric Vehicles Fitted as (Trade Publication), 31
Spring, Motor-Vehicle, Factory for Making, 14
Standard Motor Co., Ltd., Factory at Kirkby, 302
Taxicabs with Diesel Engines, 196
Tractors (Trade Publications), 286, 797
Tractors, David Brown, Assembly in India, 489
Tractor, Ferguson, Production of, 750
Transport Undertakings, Co-operation Between, 14
Trolleybus Building in Midlands, 558
Trolleybuses, Rheostatic Braking for, 756
Vauxhall Motors, Ltd., 100,000th Car, 814
Vehicle Bodies, Light-Weight (Trade Publication), 31
Wheels of Public-Service Vehicles, Stresses in, 121

Naval:

Admiralty Contracts in South Wales, 46
Frigate, New Type, Launch of, 13
Mauritius, H.M. Cruiser, Placed on Reserve, 607
Royal Naval College, Change of Names of, 37
Salvage of French War Wreck, 608
"Sea Hawk" Aircraft for Royal Navy, 46
Tyne Shipyards, Naval Construction at, 671

Naval. See also *Aeronautics*

Obituary. See GENERAL INDEX

Oil. See *Miscellaneous*

Oil Engines. See *Gas and Oil Engines*

Physics and Chemistry:

Ammonia Plant, Billingham, Extensions to, 558
Atmospheric Dust Research, 475
Australian Engineering Research, Survey of, 247
Betatron for Therapeutical Work, 664
"Bouncing Putty," 143
Cathode-Ray Tube Manufacture, 142
Cathodic Protection, Symposium on, 411
Chemical Engineering, European Federation of, 37
Chemical Research Laboratory, Teddington, 127
Chemical Society's Research Fund, 269
Hydraulic Research, International Association for, 211
Hydrochloric-Acid Plant at Pontypridd, 654
Laboratory Equipment (Trade Publication), 175
Photo-Elasticity, Courses on, 299
Photo-Elasticity, Photo-Stress Phenomenon in, 25
Photogrammetric Research, Experimental, 536
Psychromatics, Study of, 573
Research Apparatus (Trade Publication), 768
Research Laboratory in Sheffield, 238
Research Publications, Dollar Aid for, 124
Silicone Rubber Exhibition, 640, 716
Synchrotron at Birmingham University, 110
Vermiculite, Exfoliated, as Heat Insulator, 775
Yarrow & Co., Ltd., Research Department at, 686

Power Plants. See *Electricity*

Prestressed Concrete. See *Cement and Concrete*

Railways and Locomotives :

Ballast Cleaning, Mechanical, 310
Birmingham, Suburban Rail Transport in, 462
Carlisle Station, New Roof for, 814
Centenaries, Railway, 718
Coal Engines, Last of, 682
Connel-Ballachulish Tunnel, 270
Damaged Railway Halt in Severn Valley, Closure of, 334
Derailment of Goods Train, 622
Detector, Ultrasonic, for Flaws in Rails, 412
Diesel-Engined Train, Tests of, 238
Diesel Railcars for Lake District, 398
Drains, Installation in Railway Tunnel, 430
Electric Train Service in Lancashire, 270
" Flying Arches " at Chorley, 469
Glasgow Underground Railway, Flooding of, 46
Goods-Train Services in Scotland, Withdrawal of, 334
Heaton Locomotive Sheds, Extensions to, 14
Highland Railway Lines, Electrification of, 814
Irish Railways, Public Ownership of, 98, 239
Jugoslav Railway Wagons, Springs for, 430
Kilsby Tunnel, Closure of, 238
Locomotive Crews, Radio Telephones for, 814
Locomotives, Diesel-Electric (Trade Publication), 384
Locomotives, Diesel-Electric, on British Railways, 558
Locomotives, Diesel-Electric, for New South Wales, 212
Locomotives, Maintenance Record for, 398
Locomotive, Narrow-Gauge, Industrial, 360
Locomotive, Old, for Science Museum, 526
Locomotives, Steam (Trade Publication), 640
Locomotive Works, Extensions to, 206
London-Southend-Chelmsford Railway, Electrification of, 550
" London on Wheels " Exhibition, 298
Motive-Power Depot, Thornaby, 46
Northern Ireland Branch Railways, Abandonment of, 158
Passenger Services in Midlands, Withdrawal of, 782
Port Talbot, Level Crossing at, 366
Rail Production at Workington, 686
Scunthorpe, Marshalling Yards at, 814
Sheffield-Manchester Railway Electrification Scheme, 686
Shifnal Railway Bridge, Demolition of, 627
Shropshire, Derailment in, 653
Signalling System, Colour-Light, at Newcastle, 78
Signalling System for Mine Locomotives (Trade Publication), 159
Talyllyn Railway, Report on, 462
Train Services, Call for Improvement in, 430
Transport Undertakings, Co-operation Between, 14
Wagons, Railway, Manufacture at Paisley, 494
Wagon Works, Apprentices for, 14
Watergate Colliery, Underground Railway at, 526
Woodhead Tunnel, Construction of, 46
Woodhead Tunnel, Track Laying at, 469
Woodhorn-Lynemouth Mineral Railway, 206

Reinforced Concrete. See *Cement and Concrete*

Schools. See *Education*

Sewerage and Drainage:

Canal Reservoir as Refuse Tip, 462
Detergent Troubles at Sewage Works, 526
Drainage and Water Inspectors, Examination of, 119
Sewage Power Station, Gas Turbines for, 777
Sludge Heaters (Trade Publication), 525
Union Canal, Sewer-Laying under, 238

Ships and Shipbuilding:

Aberdeen Shipyard, Purchase of, 654
Admiralty Contracts for Wales, 366
" Albion," H.M.S., Flight Deck of, 536
Berwick, Shipbuilding at, 174, 462
Berwick Shipyard, Sale of, 78
Blyth, Shipbuilding Developments at, 366
Boat Engine, Improved, 78
Collier, Rapid Loading of, 602
Damaged Ship Equipment, Rapid Replacement of, 270
Depreciation Allowance on Ships, 302
Dirty Diving Work, Extra Pay for, 302
Dry Docks for Large Tankers, 78
" Duchess of Fife," S.S., Demolition of, 398
" Duke of York," S.S., New Fore Part for, 270
" Empress of Canada," Loss of, 718
Eyemouth Shipyard, Sale of, 78
Fans, Marine (Trade Publication), 480
Ferry for Luing and Seil Islands, 238
Frame for Testing Ships' Structures, 78
Gray, W., & Co., Ltd., Development of Works of, 622
Helicopter Trials on Shipboard, 825
Instruments for Marine Use (Trade Publication), 768
" King Edward," Turbines of, 174
Lighthouse, Clyde, Rating of, 782
Lightship, Wooden, Damage to, 383
Load-Distribution Indicator (Trade Publication), 704
" Maillé Brézé," Salvage of, 366
" Mauritius," H.M.S., Refit of, 398
Mooring Equipment at Rangoon, 718
Newport, New Shipyard at, 718
Newport, Shipbuilding at, 238

Ships and Shipbuilding—*continued.*

North-East Coast Shipbuilding Industry, Employment in, 238
" Orontes," Conversion to One Class, 191
" Princess Victoria," Loss of, 128
Propellers, Ships' (Trade Publication), 670
Radar for Cargo Vessels (Trade Publication), 159
Radar, Marine (Trade Publication), 768
" Raeburn," M.S., Repairs to, 654
Riverboat, American, British Gears in, 638
Royal Yacht, Building of, 430, 622
Scotland, Shipbuilding in, 78, 206, 334, 750
Shipbuilding Contracts, Cancellation of, 46
Shipbuilding, Film of, 46
Shipbuilding, High Cost of, 430
Shipbuilding Orders, Changes in, 46
Shipyard Apprentices, Prizes for, 183
South Shields, Dry Dock Scheme for, 654
South Wales Ports, Traffic of, 462, 686, 814
Steel Plates for Shipbuilding Industry, 252, 827
" Strathaird " and " Strathnaver," Conversion to One Class, 27
Tankers, American, for Demolition, 14
Tanker, Construction in Two Parts, 622
Tees, Shipping Statistics of, 782
Tyne, Ship Launches on, 110
Tyne, Shipbuilding Activities on, 46, 334, 622, 750
Tyne, Shipbuilding Order for, 174
Tyne Shipyards, Unemployment in, 750
War Cargoes, Salvage of, 366
Wear Shipbuilders' Association, Centenary of, 206, 398, 718
Wear, Shipbuilding on, 782, 814
Welding, Use in Shipbuilding, 14
Whale-Factory Ship Refit for Rotterdam, 46

Societies. See *Technical Societies;* and *Trade Societies, Etc.*

Strikes. See *Trade Societies, Etc.*

Technical Societies:

American Society for Testing Materials, 475
Australia, Institution of Engineers, 247
Birmingham Metallurgical Society, 590
British Agricultural Engineers, Institution of, 271
British Photographers, Institute of, 303, 360
Chemical Industry, Society of, 411
Chemical Society, 269
Civil Engineers, Institution of, 87, 108, 127, 224, 771, 828
Cost and Works Accountants, Institute of, 278
Electrical Association for Women, 437
Electrical Engineers, Institution of, 70, 73, 156, 730, 733, 798
Engineers' Guild, 206
English Electric and Napier Engineering Society, 567
Glasgow Society of Model Engineers, 622
Glasgow University Engineering Society, 556
Iron and Steel Institute, West of Scotland, 21
Manchester Association of Engineers, 542
Marine Engineers, Institute of, 143, 418
Mechanical Engineers, Institution of, 25, 44, 240
Metallurgists, Institution of, 269, 461
Old N'Ions Association, 523
Petroleum, Institute of, 287, 831
Plant Engineers, Incorporated, 750
Production Engineers, Institution of, 77, 218, 334
Radio Engineers, British Institution of, 314
Refrigeration, International Institute of, 76
Royal Aeronautical Society, 585, 830
Royal Institution, 800
Royal Society, 139, 199
Royal Society of Arts, 797
Royal Society of Edinburgh, 78
Sanitary Institute, Royal, 119, 169
South Wales Institute of Engineers, 590
Supervising Electrical Engineers, Association of, 34, 235, 285
Surveyors, Chartered, Royal Institution of, 62
Television Society, 685
Transport, Institute of, 471
Welding, Institute of, 669

Telegraphy. See *Electricity*

Telephony. See *Electricity*

Tools. See *Machine and Other Tools*

Trade. See *Coal; Electricity; Industries and Commerce; Iron and Steel;* and *Ships and Shipbuilding*

Trade Publications:

31, 64, 96, 128, 159, 175, 213, 286, 320, 384, 416, 480, 511, 525, 545, 608, 640, 670, 704, 768, 797, 831
Aero Controls, Ltd.
Airscrew Co. and Jicwood, Ltd., 64
Alexander, G. H., Machinery, Ltd., 768
Allspeeds, Ltd., 384
Aluminium Development Association, 213
Aluminium, Ltd., 797
Ames Crosta Mills & Co., Ltd., 525
Angel Truck Co., Ltd., 159
Ashton, N. C., Ltd., 175
Ashworth & Parker, Ltd., 797
Austin Crompton Parkinson Electric Vehicles, Ltd., 31
Automatic Telephone and Electric Co., Ltd., 64, 159, 320, 416
Bagnall, W. G., Ltd., 640
Bakelite, Ltd., 213, 797
Baldwin-Lima-Hamilton Corp., 384
B.E.N. Patents, Ltd., 480, 831
Benjamin Electric, Ltd., 159, 512
Berry, R., & Son, Ltd., 416
Bigwood, J., & Sons, Ltd., 175
B.I.P. Tools, Ltd., 128
Birlec, Ltd., 768

Trade Publications—*continued.*

Birtley Co., Ltd., 286, 384
B.K.L. Alloys, Ltd., 525
Blick Time Recorders, Ltd., 213, 286
Bristol's Instrument Co., Ltd., 128
British Electrical Development Association, 797
British Insulated Callender's Cables, Ltd., 31 (2)
British Jeffrey-Diamond, Ltd., 831
British Oxygen Co., Ltd., 159
British Reinforced Asbestos Co., Ltd., 96
British Ropes, Ltd., 511
British Thomson-Houston Co., Ltd., 128, 670
British Tyre & Rubber Co., Ltd., 128
British Unipress Agency, 704
Brockhouse, J., & Co., Ltd., 416
Broom & Wade, Ltd., 797
Brown, D., Corp. (Sales), Ltd., 608, 640, 797
Brush Export, Ltd., 320
Cambridge Instrument Co., Ltd., 608, 704
Canning, W., & Co., Ltd., 525, 670
Caterpillar Tractor Co., 286
Cementation, Ltd., 286
Chamberlain Industries, Ltd., 286
Civitas Trading Corporation, Ltd., 96
Clarke, Chapman & Co., Ltd., 320 (2)
Clayton Crane & Hoist Co., Ltd., 384
Collis, J., & Sons, Ltd., 213
Commer Cars, Ltd., 831
Complioflex Co., Ltd., 545
Compression Ignition, Ltd., 175
Copper Development Association, 213
Corpet Louvet & Cie., 286
Crabtree, J. A., & Co., Ltd., 31
Creators, Ltd., 128
Credit Insurance Association, Ltd., 608
Davey, Paxman & Co., Ltd., 640
Davy and United Engineering Co., Ltd., 175
Decca Radar, Ltd., 159
Deloro Stellite, Ltd., 175
Dorman & Smith, Ltd., 670
Doulton & Co., Ltd., 175
Edison Swan Electric Co., Ltd., 670
Edwards, F. J., Ltd., 608, 831
Edwards, W., & Co. (London), Ltd., 286
English Electric Co., Ltd., 640, 831
Ferranti, Ltd., 128, 159
Firth-Vickers Stainless Steels, Ltd., 213
Fisher Governor Co., Ltd., 175, 384
Fleming Safety Goggles, 525
Flight Refuelling, Ltd., 704, 831
Foster Transformers, Ltd., 525
Foster Wheeler Ltd., 320
Freeman, H., 416
Fyffe & Co., Ltd., 831
General Electric Co., Ltd., 159, 480, 512, 608, 670
General Signal and Time Systems, Ltd., 175
Gordon, J., & Co., Ltd., 128
Götaverken Aktiebolag, 704
Hadland, J., & Co., 704
Hansen-Vering, C., 670
Harmans Engineering Co., 545
Harvey, G. A., & Co. (London), Ltd., 175
H.E.C. Compressors and Engines, Ltd., 768
Henley's, W. T., Telegraph Works Co., Ltd., 128
Higgs Motors, Ltd., 670
Hilger & Watts, Ltd., 545
Holman Bros., Ltd., 159
Holroyd, J., & Co., Ltd., 320
Hope's Heating & Engineering, Ltd., 512
Ilford, Ltd., 512
Imperial Chemical Industries, Ltd., 175
Industrial Diamond, Ltd., 511
Industrial Soaps, Ltd., 831
Innoxa Laboratories, 416
International Combustion, Ltd., 159 (3), 175
Iraq Petroleum Co., Ltd., 797
Jones, S., & Co., Ltd., 416
Kelvin & Hughes (Marine), Ltd., 768
Kerry's (Great Britain), Ltd., 320
King, G. W., Ltd., 159
Lewin Road Sweepers, Ltd., 213
Leyland Motors, Ltd., 416
Mackley, E. N., & Co., 480
Maiden & Co., Ltd., 286
Mallison & Eckersley, Ltd., 608
Marton Air Equipment, Ltd., 525
Meddings, W. J., Ltd., 384
Metropolitan-Vickers Electrical Co., Ltd., 320, 670
Michigan Tool Co., 213
Millet, Levens (Engravers), Ltd., 31
M.K. Electric, Ltd., 608
Morgan Crucible Co., Ltd., 175
Morris, H., Ltd., 213
Motor Gear & Engineering Co., Ltd., 31
Mullard, Ltd., 320
Neill, J., & Co. (Sheffield), Ltd., 797
Newman Industries, Ltd., 480, 704
Normalair, Ltd., 797
North Western Electricity Board, 797
Northern Aluminium Co., Ltd., 31, 175
Ormonde Ashton, Ltd., 416
Palnut Co., Ltd., 831
Payter, E. C., & Co., Ltd., 159
Pike, G., Ltd., 797
Pioneer Oilsealing & Moulding Co., Ltd., 608
Plysu Products, Ltd., 31
Precision Components (Barnet), Ltd., 670
Radiovisor Parent, Ltd., 159
Ragosine Oil Co., Ltd., 831
Ransomes & Rapier, Ltd., 96
Realm Engineering Works, Ltd., 831 (2)
Record Electrical Co., Ltd., 608
Redweld, Ltd., 286, 480
Renold & Coventry Chain Co., Ltd., 320
Rheostatic Co., Ltd., 64
Rolls-Royce, Ltd., 128
Rose, Downs & Thompson, Ltd., 31, 525
Scott Bader & Co., Ltd., 213
Service Commercial de l'O.N.E.R.A., 768
Shell-Mex & B.P., Ltd., 31
Simon-Carves, Ltd., 512
Solus-Schall, Ltd., 320, 797
Standard Telephones & Cables, Ltd., 64, 96 (2), 159 (2), 286, 480, 608
Startrite Engineering Co., Ltd., 545
Steam Storage Co., Ltd., 545
Steels Engineering Products, Ltd., 128, 511

Trade Publications—*continued.*

Steelweld Pty., Ltd., 286
Sturtevant Engineering Co., Ltd., 128, 320
Suffolk Iron Foundry (1920), Ltd., 175
Sumo Pumps, Ltd., 608
Sunvic Controls, Ltd., 831 (3)
Superbuilt Products, Ltd., 511
Sykes Machine Tool Co., Ltd., 213
Sykes, W. E., Ltd., 525
Tecalemit, Ltd., 831
Teddington Industrial Equipment, Ltd., 511
Telegraph Construction & Maintenance Co., Ltd., 525
Thornycroft, J. I., & Co., Ltd., 286, 670
Turbine Gears, Ltd., 286
Unilever, Ltd., 286
United Ebonite & Lorival, Ltd., 64
Venner, Ltd., 525
Visco Engineering Co., Ltd., 768
Volkmann, O. A., 511
Wadkin, Ltd., 511
Ward, T. W., Ltd., 31
Weir, G. & J., Ltd., 480, 768
Weston, C., & Co., Ltd., 670
Whessoe, Ltd., 831
White's Marine Engineering Co., Ltd., 213
Wild-Barfield Electric Furnaces, Ltd., 175
Wilmot Trucks, Ltd., 797
Woods of Colchester, Ltd., 480
Wright Boag & Head Wrightson (Pty.), Ltd., 286

Trade Societies, Etc.:

Absenteeism in Mining Industry, 88
Accidents in Shipyards, Employees' Responsibility for, 344
Admiralty Dockyards, Meal Breaks at, 312
Aircraft Factory, Skilled Labour at, 686
Allen, E., & Co., Ltd., Issue of Suggestions Handbook by, 376
American System of Clocking-in, Objections to, 462
Asbestos Industry, Wages in, 440
Beard, W. B., Views of, 280
Birmingham Factory, Three-Shift Operation at, 110
Boilermakers, United Society of, 248, 344
Breakaway Unions, Action Relating to, 152, 184, 312
British Employers' Confederation, 189
British Productivity Council, Formation of Local Committees by, 408
British Transport Commission, Pension Scheme of, 376, 472; Railway Wage Claim Against, 760, 792, 824
Brotherton, H. G., Address to Confederation of Shipbuilding and Engineering Unions, 248
Building Industry, Wages in, 440
Building Trade Employers, National Federation of, 440
Building Trades Operatives, National Federation of, 440
Bulletin for Industry, Treasury's Publication, 600
Burnham Technical Committee, 696
Butler, R. A., on Country's Economic Resources, 504
Challenge to Britain, Labour Party Pamphlet, 120, 216, 248, 472
Chemical Industry, Nationalisation of, 24
Chemical Workers' Union, 24
Chesterfield Tube Co., Ltd., Dispute at Works of, 696
Churchill, Sir W., on Trade Unions, 504
Civil Service Arbitration Tribunal, 152, 184
Civil Service, Equal Pay in, 312
Civil Service Unions, Small, Recognition of, 152, 184
Civil Service, Wages and Salaries in, 184, 792
Clocking-in, American System, Objections to, 462
Coal Imports from Europe, 88
Coal for Industrial Use, Cheapness of, 760
Coke Oven Plants, Wages and Conditions at, 590
Conservative Party, Annual Conference of, 504
Constructional Engineering Union, 248
Controlling Officers, Association of, 184
Court of Inquiry for Electrical Industry 376, 408, 536
Crane Operative, Refusal to Join in Strike, 792
Deakin, A., on Nationalisation of Industry, 120; Plan for Engineering, 472; Mischief Making, 728
Dirty Work, Extra Pay for, 302
Dockers, Strike of, 152, 216
Dockers, Wage Claims of, 152, 216, 376
Edwards, E., Retirement of, 440
Elderly Persons, Employment of, 191, 590
Electrical Trades Union, Electricians' Disputes with London County Council, 24; Views Respecting Engineering Employers, 248; Guerrilla Strike Action by, 280, 312, 344, 376, 408, 536, 664; Dispute Over Tea Breaks, 440
Engineering and Allied Employers' National Federation, Wage Claim of Engineering and Shipbuilding Employees, 56, 120, 152, 248, 504, 536, 568, 600, 632, 664, 696, 728, 760, 792; Women Engineering Employees' Wage Claims, 184; Claim Concerning Patternmakers' Differential, 280; Draughtsmen's Wage Claim, 344
Engineering and Allied Employers' South Wales Association, 152
Engineering and Allied Employers' West Riding Group, 568
Engineering Industry, Progressive Nationalisation of, 248
Engineering Officers (Telecommunications) Association, 152, 184
Engineering and Shipbuilding Draughtsmen, Association of, 344, 792
Engineering Union, Amalgamated, Views on Nationalisation, 216; Demand for Reduction of Working Week, 248; Railway Pension Scheme, 376; Dispute over Tea Breaks, 440; Demand for Higher Wages, 792

Trade Societies, Etc.—*continued.*

Equal Pay for Women, 312
Fire Brigades Union, 312
Ford Motor Co., Ltd., Wage Increases to Employees of, 760
Foreign Competition, Increase in, 568
Foundry Workers, Amalgamated Union of, Wage Claim, 56; Views on Britain's Economy, 344
Fuel and Power, Ministry of, Statistics of, 376
General and Municipal Workers, National Union of, 248, 696
Guerrilla Strike Action by Electrical Trades Union, 280, 312, 344, 376, 408, 536, 664
Handley Page, Ltd., Strike at Factory of, 792
Holidays in Sheffield Works, 78; at Shipyards, 110
Houldsworth, Sir H., on Absenteeism in Mining Industry, 88
Index of Retail Prices, 408, 824
Industrial Court, Award of, 312
Industrial Disputes. See *Strikes*
Industrial Disputes Tribunal, 344, 376
Iron and Steel Board, Trade-Union Membership of, 344
Junior Fire Officers' Association, 312
Labour Party Conference, 216, 472
Local Authorities, Wages of Manual Workers Employed by, 600
Locomotive Engineers and Firemen, Associated Society of, Wage Claim of, 56, 216, 312, 408, 472, 664, 760, 792, 824
London County Council Employees' Dispute with Electrical Trades Union, 24
Long Service, Gratuities for, 686, 814
Merchant Navy, Wages in, 632
Metals Industry, Wages in, 632
Midlands, Employment in, 430, 654
Miners, Over-Age, Employment of, 206
Mineworkers, National Union of, 56, 88, 152, 600, 760
Monckton, Sir W., Tribute to, 120
Morrison, H., Views of, 472
Motor Engineers, National Guild of, 184
Motor Industry, Employment in, 174
Motor Works, Resumption of Full Time at, 750
National Coal Board, 56, 152, 440, 536, 568, 600
National Federated Electrical Association, 280, 312, 344, 376, 408, 536, 664
National Insurance Act, Provisions of, 536
National Insurance Benefit, Inquiry into Payment of, 24
National Joint Council for Electrical-Contracting Industry, 280, 312
National Maritime Board, 632, 728
Nationalisation of Industry, 120, 216, 248, 344, 376

Trade Societies, Etc.—*continued.*

Northern Ireland, Employment in, 664
O'Brien, T., on Need for Higher Production, 88, 376
Oil Companies' Employees, Strike by, 568
Old Age, Inquiry into Problems of, 191
Old People, Employment of, 590
Overtime, Ban on, 696, 760, 792
Oxford University, Retiring Age at, 632
Patternmakers' Association, United, Patternmakers' Differential, 280
Pension Scheme for Employees of British Transport Commission, 376, 472
Pension Scheme for Miners, 88
Piecework, Ban on, 696, 760, 792
Plan for Engineering, 472
Post Office Engineering Union, Recognition of Small Associations by, 184
Post Office Unions, Small, Recognition of, 152, 184
Postal and Telegraph Officers, National Association of, 184
Preston Factory, Tea Break Dispute at, 440
Production, Pleas for Increases in, 88
Productivity Committees, Local, Formation of, 408
Professional Civil Servants, Institution of, 152
"Queen Elizabeth," Delays to, 792
Railway Executive, 56, 184, 216, 408
Railway Shopmen's National Council, 56
Railway Staff National Council, 408
Railway Staff National Tribunal, 216, 664, 760, 792
Railwaymen, National Union of, Conciliation Staffs' Wage Scheme, 56, 216, 408, 664, 760, 792, 824; Shopmen's Wage Claim, 56, 184; Paignton Conference, 88; Dock Employees' Wage Claim, 312
Redundancy in Chesterfield, 302
Redundancy of Miners, 622
Retiring Age for University Teachers, 632
Safety Boots, Purchase of, 632
Sales, W. H., Appointment to National Coal Board, 440
Saturday Work, Attitude of Swansea Miners to, 590
Scientific Workers, Association of, Proposed Merger with ASSET, 120
Scunthorpe, Employment at, 174
Seamen's Wages, Claims for Increases in, 728
Sheffield, Employment of Juveniles in, 430
Sheffield, Labour Position in, 206
Sheffield, Works Holidays in, 78
Ship Constructors' and Shipwrights' Association, 344
Shipbuilding Employers' Federation, 152, 248, 536, 792
Shipbuilding and Engineering Unions, Confederation of, Wage Claim of Engineering and Shipbuilding Employees, 56, 120, 152, 248, 504, 536, 568, 600, 632, 664, 696, 728, 760, 792; Railway Shopmen's Wage Claim, 184, 408; Annual Conference, 248; Shop Stewards' Activities, 824

Trade Societies, Etc.—*continued.*

Shipbuilding Industry, North-East Coast, Employment in, 238
Shipyards, Effect of Holidays at, 110
Shipyard Employees' Responsibility for Accidents, 344
Shop Stewards, Activities of, 824
Skilled Labour at Aircraft Factory, 686
Standard Motor Co., Ltd., Shop Stewards at, 824
Strikes by Hull Dockers, 152; Yarmouth Dockers, 216; Electrical-Contracting Employees, 280; over Tea Breaks, 440; Employees of Oil Companies, 568; Engineers, 696, 728, 750, 760; Employees of Chesterfield Tube Co., Ltd., 696; Employees of Handley Page, Ltd., 792; Tugmen, 792
Strike Statistics, Ministry of Labour, 184, 440, 600
Supervisory Staffs, Executives and Technicians, Proposed Merger with Association of Scientific Workers, 120
Target, Suggestions in, 376
Tea Breaks, Disputes Over, 440
Technical Colleges, Salaries of Teachers in, 696
Tees-Side, Employment on, 462
Telephone Supervising Officers, National Association of, 184
Terrington Committee, Report of, 184
Three-Shift Operation at Birmingham Factory, 110
Tin-Plate Industry, Labour Position in, 622
Trade Unions, Importance of, 504
Trade Unions, Statistics of, 728
Trades Union Congress, Annual Meeting of, 312, 344, 376
Trades Union Congress Economic Committee, 536
Transport and General Workers' Union, Annual Conference, 24; Biennial Conference, 88, 120; Strike of Hull Dockers, 152; Strike of Yarmouth Dockers, 216; Wage Claim of Oil Companies' Employees, 568; Plea to Stop Mischief Making, 728
Transport and Salaried Staffs' Association, Wage Claim of, 56, 216, 408, 664, 760, 792, 824
Tugmen, Strike of, 792
Tyne and Blyth Federation of Shipbuilding and Engineering Unions, 568
Tyne Shipyards, Unemployment at, 344, 750
Unemployment in Wales, 302

Trade Societies, Etc.—*continued.*

Unions, Small, Official Recognition of, 152, 184
United States, Cost of Living in, 728
University Staffs, Retiring Ages for, 632
Wage Claims, Engineering Employees, 56, 120, 152 248, 504, 536, 568, 600, 632, 664, 696, 728, 760, 792; Shipbuilding Employees, 56, 120, 152, 248, 504, 536, 568, 600, 632, 664, 696, 728, 760, 792; Railwaymen, 56, 216, 312, 408, 664, 760, 792, 824; Railway Shopmen, 56, 184, 408; Miners, 56, 408, 440, 536, 568, 600; Foundry Employees, 56; Women Engineering Employees, 184; Civil Servants, 184, 792; London County Council Staff, 184; Dockers, 216, 376; Patternmakers, 280; Operatives Making Glass Containers, 312; Docks and Waterways Employees, 312; Draughtsmen, 344, 792; Employees in Asbestos Industry, 440; Operatives in Building Industry, 440; Oil Companies' Employees, 568; Manual Workers Employed by Local Authorities, 600; Workpeople in Metals Industry, 632; Teachers in Technical Colleges, 696; Seamen, 728; Employees of Ford Motor Co., Ltd., 760
Wage, Legal Minimum, Proposals for, 24
Wage Statistics, Ministry of Labour, 184, 440, 600
Wales, Unemployment in, 302
Winfray Engineering Co., Ltd., Strike of Employees of, 792, 824
Women, Equal Pay for, 312
Working Population, Ministry of Labour Statistics of, 216, 344, 696
Working Week, Engineering, Suggested Reduction of, 248
Yorkshire, Employment in, 494

Tramways:

Birmingham Tram Car for Museum, 110
Birmingham Tramways, End of, 78
Dundee Tramways, Activities of, 398
Glasgow, Purchase of Tram Cars by, 398
Leeds, Tram Car for, 199
Liverpool Tram Cars, Sale of, 398, 462
Sheffield, Tramway Services in, 78

Turbines. See *Engines and Boilers*

Universities. See *Education*

Vehicles. See *Motor Cars, Etc.*; and *Railways and Locomotives*

Printed in Great Britain by HARRISON & SONS, LTD., Printers to the late King George VI, London, Hayes (Middx.) and High Wycombe and Published by ENGINEERING, Ltd., 35 & 36 Bedford St., Strand, London, W.C.2.